FUTURE Problem Solving

ACTIVITY UNIT

Topic

Video Games

Civics & Society

17

Activities

Supports all these programs

INCLUDED INSIDE:

- 13 lesson plans
- 2 practice future scenes
- A variety of tools, research, and metacognition activities
- A variety of specific problem-solving step activities

Qualifying Problem | 2025-2026

GRADES 4-12

This publication is a compilation of the hard work of many people. Special thanks are extended to our curriculum authors Kathy Frazier and Kori Frazier Morgan.

FUTURE Problem Solving
ACTIVITY UNIT

Topic Activity Contents

How might evolving gaming technology, laws, and consumer expectations impact the business of video games in the future?

Activity Focus Areas Icons

Our activity unit on each topic contains a wealth of curricular resources for use with students in a variety of settings, including out-of-school time. The highly engaging activities incorporate best practices and come with step-by-step lesson plans for research-based independent and collaborative work. Each activity is designed to help students gain insight into a specific real world topic and learn the Future Problem Solving 6-step process. For ease of use, we display icons on each lesson plan to indicate the activity focus.

Research
Explore the topic using multimedia research for background and understanding.

Tools
Utilize tools for problem solving, either generating new ideas or focusing existing ideas, in the activity.

Metacognition
Metacognition prompts allow students to explore their thought processes related to the problem-solving process, their teamwork, and their performance.

Future Scene
Practice future scenes allow students to apply the problem-solving process.

Action Plan Presentation
Tips and instructions help students present their Step 6 action plans.

Steps 1 - 6
TIn each activity, students explore specific steps of the Future Problem Solving process for deeper understanding and application of creative and critical thinking skills.

Identify Challenges
Generate challenges or issues related to a specific situation.

Select an Underlying Problem
Analyze possible challenges to determine a single focused area to address.

Produce Solution Ideas
Generate a variety of potential solution ideas to resolve the selected underlying problem.

Select Criteria
Create criteria to measure the merit of solution ideas.

Apply Criteria to Top Solutions
Evaluate solution ideas using student-designed criteria to identify the most promising solution.

Develop an Action Plan
Based on the strongest solution develop a plan of action to explain and implement the best solution.

For more information about Future Problem Solving, our proven 6-step process, and how it connects to a wide variety of education standards, visit resources.futureproblemsolving.org.

FUTURE Problem Solving
ACTIVITY UNIT

Education Standards Alignment

We also highlight how each activity lesson plan aligns with English Language Arts and Literacy education standard strands. Our Future Problem Solving process fulfills a wide variety of education standards. We take connecting with these standards into account when developing all our program materials so teachers can easily tailor activities to meet their specific education system and local requirements. Use the legend on the following page to connect lesson plans to specific reading, writing, speaking, and listening standards.

	Education Standard Strands Addressed											
Video Games Activity	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**PAGE #**
The Wall of Fame	●	●	●	●	●	●	●	●		●		**7**
Knowledge Unlocked			●	●	●	●	●	●	●	●	●	**12**
Alpha Release	●	●	●	●	●	●			●	●	●	13
Beta Testing	●	●	●	●	●	●			●	●	●	**22**
Game-Changing Challenges	●	●	●		●		●	●	●	●	●	**27**
High Stakes Challenges	●	●	●	●	●	●	●	●	●	●	●	**33**
Ultimate Underlying Problem Quest	●	●	●	●	●	●	●	●		●	●	**36**
Unlock the Underlying Problem Mystery	●	●	●	●	●	●	●	●	●	●	●	**44**
Game On	●	●	●		●	●	●	●	●	●	●	**50**
Design a Solution Data Glove	●	●	●	●	●	●	●	●	●	●	●	**54**
Press Pause	●	●	●	●		●	●	●	●	●	●	**57**
Become a Criteria Developer	●	●	●	●	●	●	●	●		●	●	**63**
Gaming in the Future	●	●	●	●	●	●	●	●	●	●	●	**70**
It's Party Time	●	●	●	●	●		●	●	●	●	●	**80**
Player's Choice	●	●	●		●	●	●	●	●	●	●	**84**
Practice Future Scene			●	●	●	●					●	**86**
Bouncing Around Ideas	●	●					●	●			●	**88**

1. Comprehension and Collaboration
2. Presentation of Knowledge and Ideas
3. Reading Key Ideas and Details
4. Literacy Craft and Structure
5. Integration of Knowledge and Ideas
6. Range of Reading and Level of Text Complexity
7. Writing Text Types and Purposes
8. Production and Distribution of Writing
9. Research to Build and Present Knowledge
10. Range of Writing
11. Vocabulary Acquisition and Use

For more information about Future Problem Solving, our proven 6-step process, and how it connects to a wide variety of education standards, visit resources.futureproblemsolving.org.

Topic Activity Unit Lesson Plans Standard Strands Addressed

SPEAKING & LISTENING		**COMPREHENSION AND COLLABORATION**
	1	Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
	2	Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.
	3	Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric.
		PRESENTATION OF KNOWLEDGE AND IDEAS
	4	Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience.
	5	Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.
	6	Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.
READING & LITERACY		**KEY IDEAS AND DETAILS**
	1	Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
	2	Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.
	3	Analyze how and why individuals, events, and ideas develop and interact over the course of a text.
		CRAFT AND STRUCTURE
	4	Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
	5	Analyze the structure of texts, including how specific sentences, paragraphs, and larger portions of the text (e.g., a section, chapter, scene, or stanza) relate to each other and the whole.
	6	Assess how point of view or purpose shapes the content and style of a text.
		INTEGRATION OF KNOWLEDGE AND IDEAS
	7	Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.
	8	Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.
	9	Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
		RANGE OF READING AND LEVEL OF TEXT COMPLEXITY
	10	Read and comprehend complex literary and informational texts independently and proficiently.
WRITING		**TEXT TYPES AND PURPOSES**
	1	Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
	2	Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.
	3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.
		PRODUCTION AND DISTRIBUTION OF WRITING
	4	Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
	5	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.
	6	Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.
		RESEARCH TO BUILD AND PRESENT KNOWLEDGE
	7	Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
	8	Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source, and integrate the information while avoiding plagiarism.
	9	Draw evidence from literary and/or informational texts to support analysis, reflection, and research.
		RANGE OF WRITING
	10	Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.
LANGUAGE & VOCABULARY		**VOCABULARY ACQUISITION AND USE**
	1	Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.
	2	Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
	3	Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college- and career-readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.

FUTURE Problem Solving LESSON PLAN

What Are Your Nominations?

M STEP 1 STEP 2 STEP 3 STEP 4 STEP 5 STEP 6

Objectives

- Students will analyze the evaluator feedback from the Space Exploration problem.
- Students will identify areas of strength and for improvement in their application of the Future Problem Solving process based on the evaluator's feedback.
- Students will develop a comprehensive plan for their work on the qualifying problem, Video Games, that builds on their strengths and addresses areas for growth.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
1, 4, 7, 10
Writing
1, 4, 5, 10

Materials

- Team or Individual Space Exploration booklets (1 per team for reference)
- Team Space Exploration scoresheets (1 per team for reference)
  - Note: Your affiliate will give you evaluation results from your submitted Space Exploration booklets. If you also have students whose work was not submitted, you could assign them to work with a team or individual whose work was submitted.
- Two colors of highlighter (2 markers per team)
- **Nomination Form**, 1 per team (page 9)
- **Rising Stars Goal Setting Plan**, 1 per team, 2 pages (pages 10-11)
- A **Wall of Fame** sign, to be placed on a blank wall or bulletin board.
- Tape or another way to attach student worksheets to the **Wall of Fame**.

Preparation

1. Review score sheets from Space Exploration.
2. Make your own list of each team or individual's strengths and areas needing improvement so that you can compare your ideas with theirs when they have finished the activities in this lesson.
3. Designate space in the room for a **Wall of Fame** bulletin board. This can be a blank wall or a bulletin board. Create and post the **Wall of Fame** sign in this space. The space should have room for students to post their **Nomination Forms**.

Procedure

1	**Say:** *You have worked hard learning the Future Problem Solving six-step process, and now it is time for the qualifying problem – Video Games. Based on your work on the qualifying problem, you may receive an invitation to compete in the Affiliate Finals! Before we begin our study of Video Games, it is important to review the evaluator feedback from your Space Exploration booklet. For this lesson, you will become members of a distinguished committee that will select inductees for the Future Problem Solving Process Wall of Fame.*
2	Distribute the Space Exploration scoresheets and two colors of highlighters to each team.
3	Instruct the students to analyze their scores and the evaluator's feedback. Highlight the strengths in one color and the areas for growth in another.
4	Distribute the **Nomination Form.** Review the directions.

Coaching Tip

Use additional Resources Library tools like the Future Problem Solving 6-step Infographic poster to provide a roadmap for your students as they further develop their skills applying our problem-solving model.

FUTURE Problem Solving LESSON PLAN

What Are Your Nominations?

M STEP 1 STEP 2 STEP 3 STEP 4 STEP 5 STEP 6

Procedure, continued

5	**Provide these examples:** • Nomination: Our score on Step 1 Research Applied. Supporting Evidence: We scored 3 out of 4 points and the evaluator said we did that well. • Nomination: Challenge #10. Supporting Evidence: (Write the challenge.) This challenge received points for Clarity and Insight!
6	Provide work time. If students need access to their booklets, you can share copies of their booklet work as needed.
7	At the end of the work period, **announce**: "The Distinguished Wall of Fame Committee – me, myself, and I – accepts your nominations."
8	Call attention to the **Wall of Fame**. **Say:** *I will now give you a few minutes to select one team member to come to the Wall of Fame and accept your honor. That team member will make a brief acceptance speech, read your nominations, and attach your worksheet to the wall.*
9	Lead a discussion about what acceptance speeches sound like, emphasizing what an honor it is, thanking all those who made the honor possible, etc. Encourage the students to have fun with this!
10	Provide a few minutes for teams to plan the acceptance speech, then conduct a **Wall of Fame** "ceremony," recognizing the speaker for each team, and posting the team's worksheet after they have read the nominations and accepted the honor.
11	**Say:** *Now that we have recognized all your good work on your Video Games booklet, it's time to make a plan for your work on the topic of Video Games.*
12	Distribute the **Rising Stars Goal Setting Plan**. Review the directions.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
1, 4, 7, 10
Writing
1, 4, 5, 10

Closure

1. As the teams are developing their **Rising Stars Goal Setting Plans**, circulate and share your thoughts about their Space Exploration evaluations and feedback – strengths and areas for improvement.
2. When all plans have been developed, encourage the students to periodically look back at their plan as they are preparing for their Video Games booklet.

Name _____

Nomination Form

Directions

1. Review the Space Exploration booklet evaluation and your highlighted evaluator feedback to help you determine your Wall of Fame nominations.
2. Select two or three examples of your good work, according to your evaluator's feedback, and write them on this Nomination Form.
3. Provide supporting evidence for your nominations. Be prepared to share your nominations and supporting evidence with the class.

Nomination one _____
Supporting evidence

Nomination two _____
Supporting evidence

Nomination Three _____
Supporting evidence

Name _____

Rising Stars Goal Setting Plan

Directions

1. Work with your team on this activity.
2. Your team has the potential for growth and improvement in every step of the Future Problem Solving process. In the spaces below, identify how you and your team can improve your work on your Video Games booklet and become a Future Problem Solving Rising Star! Use your Space Exploration scores and evaluator feedback to develop your plan.

Step 1 - Identify challenges

1. How can my team improve in this step of the process?
2. What specific actions must we take to achieve this growth and improvement?

Step 2 - Select an underlying problem

1. How can my team improve in this step of the process?
2. What specific actions must we take to achieve this growth and improvement?

Step 3 – Produce solution ideas

1. How can my team improve in this step of the process?
2. What specific actions must we take to achieve this growth and improvement?

Name _____

Rising Stars Goal Setting Plan

Step 4 – Select criteria

1. How can my team improve in this step of the process?
2. What specific actions must we take to achieve this growth and improvement?

Step 5 – Apply criteria to solutions

1. How can my team improve in this step of the process?
2. What specific actions must we take to achieve this growth and improvement?

Step 6 – Develop an action plan

1. How can my team improve in this step of the process?
2. What specific actions must we take to achieve this growth and improvement?

RISING STAR – Additional thoughts

What else does my team need to do to make sure we are rising stars on our Video Games booklet?

Name _____

A KWL Journey Into Gaming

Directions: A KWL chart is a valuable tool for guiding your learning about Video Games. It will help you organize what you already know, what you want to know, and what you learn along the way.

Complete this chart individually or collaborate with your team members to create a Team KWL.

K	W	L
List the facts you already **KNOW** about Video Games.	List what you **WANT** to know about Video Games.	Record what you have **LEARNED** about Video Games.
	List your ideas in a question format.	

FUTURE Problem Solving LESSON PLAN

A First Look at the Topic of Video Games

R

Objectives

- Students will analyze research about Video Games to learn about video game production and the necessary roles for producing video games.
- Students will demonstrate comprehension of Video Games research through group discussions.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
7, 8, 9, 10
Language & Vocabulary
1, 2, 3

Materials

- A way to share the video **How video games are made** (6:36; can be stopped at 5:50)
- **Research Bank**, 1 per student (page 15)
  - Share articles electronically, if possible.
- Computer access for reading online articles.
- **Video Game Development Stages**, 1 per student (page 16)
- **Jobs in the Video Game Industry,** 1 per student (page 18)
- **Some Important Distinctions**, 1 per student (page 20)
- **Answer Keys,** 1 for coach reference, 3 pages (pages 17, 19, 21)

Preparation

1. Determine how to divide the students into groups for this activity. (Suggestion: Read the directions on the **Research Bank** handout first.)

Procedure

1	Introduce the topic of Video Games by discussing the following: • What are video games? ◦ Simple definition: An electronic game that the player interacts with using an input device such as a controller, keyboard, or joystick. • How many of you play video games? • What are your favorite video games and why do you like to play them? • How many of you would like to play video games for a living? • How many of you would like to create video games for a living?
2	**Say:** *During our study of video games, we are going to look at many aspects of the topic – not only how video games are used and their impact on our society but also the economy of video games. The economy of video games includes how they are developed and how they are marketed.*
3	**Ask:** *What do you know about how video games are developed?*
4	Entertain student responses.
5	**Say:** *Many of you know something about how games are developed but some of you might not know how complicated it can be. We are going to watch a short, simple video about video game development.*
6	Share the video.
7	After the video, **Ask:** *How well did this correspond to what you know? As you study this topic, you will learn a lot more about video games, how they are made and distributed, and their impact on the world! Are you ready?*

A First Look at the Topic of Video Games

R

Procedure, continued

8	**Say:** *To prepare for a Future Problem Solving booklet, we start by doing research on the topic. Our first task is to increase our understanding about how video games are produced and the jobs necessary to do that.*
9	**Say:** *Most of the articles you will be reading indicate that there is some agreement in the video game industry about the necessary steps in producing video games. We want to find out what happens in the beginning when someone thinks of an idea for a game and begins planning to make it. We'll consider these questions: What happens as the game begins to be developed? What happens during the actual development? What happens after the game is ready for release to gamers? What work is actually going on in each of these stages? That's what you will be researching to find out. Different companies and authors have different ideas and orders, so you will need to piece together what you read in order to get a general idea of what the work sequence is.*
10	**Say:** *Another part to this research is learning about the roles taken by the people who work in the video game industry to make a game available for us to play. What do people in those roles actually do? What jobs are necessary before, during, and after game production? It's time to find out – and, on the way, you might learn about a future job for yourself!*
11	Divide the students into groups as determined in Preparation.
12	Distribute the Research Bank and review the directions.
13	Distribute **Video Game Development Stages, Jobs in the Video Game Industry,** and **Some Important Distinctions**. Review the directions for each.
14	Provide work time.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
7, 8, 9, 10
Language & Vocabulary
1, 2, 3

Closure

1. Allow students to share their findings and the answers to the questions. As the discussion progresses, make sure they have a basic understanding video game development.
2. **Announce:** *We'll be coming back to some of these video game roles in later lessons!*

Name _____

Research Bank

Directions

1. Determine who in your group will read which article. Each article should have at least two readers. Everyone in the group should read the same number of articles.
2. Work with your group to use the information in the articles to fill in the charts and answer the questions for this activity. (If you have to go back and forth between the articles or read some of them several times, you will be learning more about the video game industry.)
3. Note: Most of these articles are presented by businesses or academies whose business is the production of video games, either selling game makers a product or offering training for jobs in the video game industry.

Alpha Release Research Bank

Game programming vs. Game design | **All Art Schools**

Stages of game development: your guide on game development process | **iLogos**

How video games are made: the game development process | **CGspectrum**

Psychology jobs in the video game industry: the ultimate quick guide | **Hitmarker**

10 jobs in video game development | **Indeed**

Top 14 video game jobs | **Indeed**

6 key stages of game development from concept to standing ovation | **Kevuru Games**

The gaming resurgence: top 10 video game jobs for 2024 | **Onward Search**

Name _____

Video Game Development Stages

Directions

1. Place the specific stages of video game development shown below where they belong on the chart.
2. After creating the timeline, briefly describe what work is done during each phase.
3. Note: Not all the articles you read will use these names.

Launch Planning Pre-launch Pre-production Production Prototyping Post-production/release Testing

	Stage
BEGINNING	
DURING	
AFTER	

Video Game Development Stages

Note: Students may find other answers. Remember that general knowledge is the goal.

	Stage
BEGINNING	**Planning** game defined, target audience determined, budget/resources/timeline determined **Pre-production** game fleshed out, storyline developed, characters developed, game mechanics mapped **Prototyping (optional)** Feasibility of game is tested
DURING	**Production** Game programmed/coded, levels designed, game assets created, animation/sound effects/music begun **Testing** Feedback collected from testers; bugs fixed **Pre-launch** Marketing materials developed, launch plan and distribution devised, beta-testing
AFTER	**Launch** Game promoted, feedback managed, issues addressed **Post-production/release** Player feedback monitored, bugs/issues addressed, patches/updates released, game community managed

Name _____

Jobs in the Video Game Industry

Directions:

1. Use information from the Research Bank to briefly describe what people do in each of these jobs. If you find more jobs that you think are important, write the name of the job and description at the end of the chart. Note: Not all articles will use these exact names.
2. In the second column, indicate in which stage of game development this work primarily gets done. It may be more than one!

Job	Description	Stage
		Before, During, or After production
Animator		
Artist		
Audio/Sound engineer		
Community/Content monitor		
Creative director		
Designer		
Developer		
Producer/Product Manager		
Marketer		
Programmer		
Psychologist/Health advocate		
Technical support specialist		
Tester/Quality assurance specialist		
Writer		

FUTURE Problem Solving
ANSWER KEY

Jobs in the Video Game Industry

R

Job	Description	Stage
		Before, During, or After production
Animator	Develops graphics and images for the game	During
Artist	Creates 2D and 3D images of characters, settings, vehicles, and objects	During
Audio/Sound engineer	Produces sound and music, including character voices, sound effects, and background music	During
Community/ Content monitor	Communicates with players (listens or shares info), handles conflicts	After
Creative director	Oversees all visual and audio aspects of the game, including the storyline	During
Designer	Creates the basic elements of the game, characters, plot, setting, etc.	Before
Developer	Oversees a team to plan, design, and produce video games, including visual content and code	Before and During
Producer/Product manager	Oversees the entire production; manages tasks, budgets, schedules, and deadlines	Before and During
Marketer	Coordinates how to promote, advertise, and sell the game	During and After
Programmer	Writes the code that makes the game, fixes issues with the game	During and After
Psychologist/ health advocate	Help optimize user experience; ensures game promotes healthy play	Before, During, and After
Technical support specialist	Troubleshoots problems	During
Tester/Quality assurance specialist	Tests the game for bugs and glitches before release. Reports issues to programmer so they can be fixed.	During
Writer	Writes the game storyline OR writes the instructions for playing the game	Before and During
Other		
Other		

Name _____

Some Important Distinctions

Directions: Use information from the Research Bank and any other sources available to answer the questions below.

1. What does “monetization” mean in video game development?

2. What is a game design document (GDD) and why is it important?

3. What is the difference between game designer and game programmer/developer?

4. What role do psychologists/health advocates play in the video game industry?

5. What does “quality assurance” mean in video game development?

Some Important Distinctions

1. **Monetization**
the process of generating revenue from a video game

2. **Game design document (GDD)**
the blueprint or roadmap for creating a video game
Includes everything: overview of the concept, target audience, objectives; details of game mechanics, controls, and progression systems; plot, setting, characters; levels and environments; audiovisual effects; technical specifications; user interface design/experience; development plan, timeline, and milestones.

3. **The difference between game designer and game programmer/developer**

Game designers focus on the creative aspects of video game production, designing gameplay mechanics, characters, and narratives.

Game programmers create the source code, algorithms, and technologies that run the game. (Some sources say game programming is part of game development and that development includes all the happens to produce a game from start to finish.)

4. **Role of psychologists/health advocates in the video game industry**

Psychologists in the video game industry study player behavior and help optimize user experience. They help ensure that games are designed with the mental health of gamers in mind.

5. **Quality assurance**
the process of ensuring that a video game meets quality standards and expectations of players and producers

It involves testing the game for a variety of things such as compliance, security, functionality, and performance. Testers help to identify bugs before the game is released to the public.

FUTURE Problem Solving LESSON PLAN

Issues with Video Games

R

Objectives

- Students will analyze research about Video Games.
- Students will demonstrate comprehension of Video Games research through group discussions.
- Students will organize their research by identified themes, including healthy gaming, games and culture, the economy of gaming, and what's next in gaming.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
7, 8, 9, 10
Language & Vocabulary
1, 2, 3

Materials

- Paper for making signs (construction paper, cardstock etc.)
- A way to post signs (e.g., tape, mounting putty, tacks for bulletin board)
- Sticky notes
- **Research Bank 1: Healthy Gaming**, 1 per student (page 24)
- **Healthy Gaming Pros and Cons**, 1 per student (page 25)
- YouTube Video: This Technology Will Change Video Games Forever (9:03)
- A way to share the video.
- **Research Bank 2: The Rest of the Story**, only 1 page, 26 only
- Computer access for reading online articles.

Preparation

1. Prepare a place on a wall or bulletin board in your meeting space where students can post ideas from research.
2. Construct one sign that says Research Wall and 5 signs for theme titles: Healthy Gaming, Game and Culture, the Economy of Gaming, What's Next in Gaming, and Other. (Students can help with this.)
3. Post the signs, leaving enough room for students to post information under each theme and create new themes as necessary. Plan to leave this space available so that students can add to it throughout the unit.
4. Determine how you will divide the students into groups. Each group should divide the articles in the **Research Banks** so that all students don't necessarily have to read each article.
5. Preview the three *starred articles in the **Research Banks.** The information is important, but there are very minor references that you might rather students avoid.

Procedure

PART ONE	
1	**Say:** *Now that you know something about video game development, it's time to consider other issues for the video game industry.*
2	Call attention to the posted topic themes. **Say:** *As you read articles related to these themes, please take notes on your own paper with important information you learn about video games: facts, challenges, solutions for each of the themes, any other information that does not fit a theme. You can organize your notes any way you want to: a mind map, a structured overview, a list. Remember to write briefly, but enough so you can recall the whole idea later.*

Procedure part one, continued

PART ONE	
3	Divide the students into groups as determined.
4	**Say:** *This research will be divided into two parts: Healthy Gaming and the rest of the themes. We'll start with Healthy Gaming. Let's find out about the pros and cons of playing video games!*
5	Distribute Research Bank 1: **Healthy Gaming and Healthy Gaming Pros and Cons.** Review the directions.
6	Provide work time.

Closure, Part 1

1. Allow students to share some of the pros and cons they found.
2. Allow them to share their answers to the Pro/Con question.
3. **Ask:** *What do you think the video game industry could do with your Pro/Con ideas?* Entertain student answers.
4. Distribute sticky notes or note cards. Provide time for students to

Procedure

PART TWO	
1	**Say:** *The next part of our research will take up the other three themes: Games and Culture, The Economy of Gaming, and What's Next in Video Games.*
2	**Say:** *Before we launch into more research, let's watch this video that presents one aspect of an exciting development in the future of video game production: Artificial Intelligence.*
3	Show the video. After the video, allow students to share their reactions.
4	**Say:** *Now it's time for research. There are a lot of articles in this research bank so it's going to be very important for your group to divide the articles among yourselves. Once you've had time to read the articles, we will add to our theme chart on the wall. Don't forget to take notes on your own paper. You'll be referring to those later.*
5	Distribute **Research Bank 2**: **The Rest of the Story.** Review the directions.
6	Provide work time.

Closure, Part 2

1. Allow students to share ideas they found in the articles.
2. Provide time for them to write some of their ideas on sticky notes or note cards and post them on the Research Wall.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
7, 8, 9, 10
Language & Vocabulary
1, 2, 3

Name _____

Research Bank 1 - Healthy Gaming

Directions

1. Divide the articles below among your group.
2. Examine the articles and any others available (such as the Research Unit chapter on Video Games) to find the pros and cons of playing video games. Fill in the chart on the next page.
3. Don't forget to take notes about healthy gaming on your own paper – facts, causes, effects, consequences, and solutions.

Research Bank 1 - Healthy gaming

Benefits of video games for kids and adults | **Geico**

The health effects of too much gaming | **Harvard**

10 negative effects of video games | **HealthyGamer**

Video games can have positive impact on children – if they are designed right, says new study | **UNICEF**

Cyberbullying and online gaming | **Stop Bullying**

Empowering the gaming industry: strategies for addressing hate, harassment, and extremism in online communities | **Take This**

Harassment in online gaming and what you can do about it | **The Defamation Attorney**

Cyberbullying and online gaming | **Mission WV**

Name _____

Healthy Gaming Pros and Cons

Directions: Fill in the chart to show the pros and cons of playing video games. Base your ideas on information you learn from the **Research Bank 1** articles and any other information you have gathered. Then, answer the question beneath the chart.

Pros	Cons

Question: Do the pros of playing video games outweigh the cons? Explain your answer.

Name _____

Research Bank 2 - The Rest of the Story

Directions

1. Divide the articles below among your group. You will each likely need to read several articles to make sure the information is covered.
2. Examine the articles and any others available (such as the Research Unit chapter on Video Games) to find facts, causes, effects, consequences, and solutions dealing with the rest of the Video Games themes: Games and Culture, What's Next in Gaming, and The Economy of Gaming. If an idea does not fit under one of the themes, create a new one.
3. Take notes on what you read on your own paper. You may want to organize your notes in a structured overview, a mind map, or a list using the themes.

Research Bank

Games and Culture

A growth of accessibility in video games. | **University of Washington**

Design of video game characters has physical-world repercussions | **MIT**

Why games celebrating cultural diversity matter more than ever now | **RTOR**

Gaming culture: A new language for the digital age | **Forbes**

How esports is helping students improve their grades and build leadership skills | **EdTech Magazine**

Video games are art, and it's time they are seen as equal to other art-forms | **The Stork**

Video games become more mainstream | **Science Direct**

What's Next in Gaming?

What impact will AI have on video game development? | **Technology Review**

What does the future of gaming look like? | **Built In**

Exploring the role of AI in game development | **iLogos**

The Economy of Gaming

How do video games affect the economy in the digital age? | **Main Leaf**

How microtransactions impact the economics of gaming | **Investopedia**

How much does it cost to make a video game? | **300 Mind**
Note: Skim this one, rather than read it word for word.

FUTURE Problem Solving LESSON PLAN

Identifying Challenges in Video Game Research

STEP 1 R

Objectives

- Students will analyze potential challenges for the video game industry from multiple stakeholder perspectives.
- Students will apply the Future Problem Solving Categories List as an idea-generation tool to identify challenges related to video games.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
2, 7
Writing
1, 2, 4, 5, 7, 10
Language & Vocabulary
1, 2, 3

Materials

- **Role Cards**, enough so that each student has one **Role Card** (page 29)
- **Stakeholder Activity Sheet**, 1 per student (page 30)
- **Stakeholder Impact Grid**, 1 per student, 2 pages (page 31-32)
- Students' own research notes and the **Research Wall**.

Preparation

1. Determine how many **Role Cards** to prepare. There are four different roles. The goal is to have one **Role Card** per student, with all roles represented as equally as possible.
2. For the first part of the lesson, students with the same role will work together. If this gives you groups of more than 6 students, you might decide to split those groups. For the **Stakeholder Impact Grid**, groups will need to be rearranged so that each group has each role represented. Determine if you will assign these groups or allow students to self-select their group.

Procedure

1	**Say:** *Step 1 of the Future Problem Solving process is identifying challenges. Now that you have done research on the topic of video games, it is time to apply that research to challenge identification. One way to find challenges in a future scene is to look at the situation from the eyes of different stakeholders. Not everyone in the future scene will have the same perspective, so you can often find different challenges this way.*
2	**Say:** *Today you will play the role of different stakeholders in the Video Game industry.*
3	Distribute the **Role Cards** so that each student has one. Several roles may be repeated. Each **Role Card** contains: • A specific role each student will play: Game Developer, Artist, Business/Marketing Expert, and Psychologist/Health Advocate • A description of the role • Assigned Categories for the role
4	**Say:** *All of you who have the same role will be working together for the first part of this activity. You will be looking for challenges for the Video Game industry through the eyes of your role. You will need your own research notes for this activity, and you can also move around the room to look at the **Research Wall** as necessary.*
5	Distribute the **Stakeholder Activity Sheets** and review the directions.

Coaching Tip

Use additional Resource Library Categories List tools like the poster and one-pager with all the definitions to help students learn and utilize the Future Problem Solving Categories List to generate challenges.

Procedure, continued

6	Students will group themselves by their roles. Provide work time. Allow movement during the activity as students review the ideas posted on the **Research Wall** as necessary.
7	After the work time, allow the groups to share their roles and some of their challenges.
8	**Say:** *The next part of this activity is designed to increase your flexible thinking even more! You are going to consider the impact of the challenges you identified through your stakeholder role on other stakeholders in the video game community.*
9	Lead students to re-arrange themselves into groups where all 4 stakeholder roles are represented according to your decision in Preparation.
10	Distribute the **Stakeholder Impact Grids**. Review the directions. Walk the students through the given example on the grid so they understand their task.
11	Provide work time.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
2, 7
Writing
1, 2, 4, 5, 7, 10
Language & Vocabulary
1, 2, 3

Closure

1. Discuss ideas from each group's **Stakeholder Impact Grids** with the whole group.
2. Ask the students what this activity taught them about brainstorming challenges. They might give answers like:
   - Even if I'm brainstorming challenges in a specific category, the challenge might have impacts on other categories. This could help me brainstorm more diverse challenges and get greater points for flexibility!
   - Looking at connections between Future Problem Solving categories could be a way to brainstorm challenges if we get stuck during the competition.
   - Finding relationships between categories can keep us from writing challenges that are repetitive.
   - It's important to consider the future scene from the perspective of the different stakeholders in the future scene.
3. **Say:** *Well done. Your teams of stakeholders have done a great job of thoroughly examining the impact of possible challenges on the video game industry. Next time, we will practice writing challenges in the correct format. Hang on to your handouts because we will be using them in the next lesson.*

Stakeholder Role: The Game Developer

You are focused on integrating cutting-edge technology and other changes in the video game to make your games playable, more competitive, and visually stunning.

Goals

- Enhance game graphics to attract more players and increase sales.
- Ensure the technology is affordable and scalable for your studio.
- Ensure the games have broad appeal in the market.

Relevant categories

Technology, Economics, Business & Commerce

Stakeholder Role: The Artist

You create original artwork, animations, storylines, and characters for the games. You are also responsible for recruiting voice talent and actors.

Goals

- Create visuals that function well and do not detract from gameplay.
- Enhance visuals of video games to improve user experience.
- Advocate for ethical, artistic practices in the gaming industry (including the use of AI as a tool rather than a replacement for workers, proper credit and compensation for work, and protecting artists' rights).

Relevant categories

Arts & Aesthetics, Culture & Religion, Ethics & Morality, Economics

Stakeholder Role: The Psychologist/Health Advocate

You focus on the psychological effects of gaming, including the impact on mental health, recreation, and the gaming community, and the use of hyper-realistic imaging.

Goals

- Ensure games are designed to support mental well-being.
- Encourage moderation in gaming to prevent addiction.

Relevant categories

Ethics & Morality, Psychological Health, Recreation, Social Relationships

Stakeholder Role: The Business/Marketing Expert

You are focused on the profitability and marketability of video games.

Goals

- Maximize revenue by capitalizing on changes and advancements in the video game industry.
- Interview gamers and conduct focus groups to ensure the game is interesting to a range of people.
- Ensure the game remains accessible to a broad market (consoles, game play, subject matter, etc).

Relevant categories

Economics, Business & Commerce, Technology

Name _____

Stakeholder Activity Sheet

Stakeholder _____

Directions: Using your research notes and any information posted in the room under the themes, work with your group to brainstorm possible challenges for the video game industry from the perspective of your assigned stakeholder role. Use the relevant Future Problem Solving categories on your **Role Card** as a starting point.

My categories

My brainstormed challenges

Name _____

Stakeholder Impact Grid

Directions

- The **Stakeholder Impact Grid** helps you analyze the relationships between challenges, their potential impacts, and the perspectives of various stakeholders. By completing this grid, you'll gain a deeper understanding of how each challenge affects different people and groups, which will help you write well-rounded and insightful challenges for the Future Problem Solving process.
- You do not need to limit yourselves to just the four stakeholders presented in this activity. You may use other video game industry roles as well as people outside the production side of the industry, such as gamers of any age, parents, educators, etc.

Steps to completing the grid

1. Identify a challenge

- Use the challenges your group brainstormed earlier or select a new one based on stakeholder discussions.
- Write the challenge idea in the first column. It does not have to be in the correct format.

2. List stakeholders most affected

- Consider which stakeholders are directly impacted by this challenge.
- Think about individuals or groups who may experience significant benefits, risks, or changes because of this issue.
- Write their roles and briefly describe why they might be affected.

3. Determine stakeholders benefiting

- Identify stakeholders who stand to gain something positive from this challenge.
- Consider financial, technological, societal, or personal advantages they might receive.
- Write their roles and briefly describe why they might benefit.

4. Identify stakeholders opposed

- Think about who might resist addressing this challenge or who may feel negatively affected by the proposed solutions.
- Write their roles and explain possible reasons for opposition.

5. Analyze and connect (why)

- In the final column, explain why the relationships between stakeholders matter.
- Consider questions like:
  - How do the benefits and drawbacks balance out?
  - Could addressing the challenge create new conflicts?
  - What trade-offs might need to be made?

Name _____

Stakeholder Impact Grid

Challenge	Stakeholders Most Affected	Stakeholders Benefitting	Potential Opposition	Why?
Example Hyper-realistic graphics may overstimulate players, potentially increasing screen addiction.	Psychologist/Health Advocate (concerned about overstimulation and addiction).	Game Developer (use immersive visuals to attract and retain players).	Parents and Health Advocates (worried about addiction and barriers for players with cognitive impairments).	This challenge balances innovation with the risks of harm, emphasizing the need for responsible game design.

FUTURE Problem Solving LESSON PLAN

Writing Challenges in Stakeholder Groups

M STEP 1 STEP 2

Objectives

- Students will compose correctly written Future Problem Solving challenges.

Standards Addressed
Speaking & Listening
1, 2, 5, 6
Reading & Literacy
1, 4, 7, 8, 10
Writing
1, 2, 4, 5, 7, 9, 10
Language & Vocabulary
2, 3

Materials

- **Stakeholder Activity Sheet** and **Stakeholder Impact Grids** from the previous lesson (each student should have their own)
- Sticky notes with different shapes or colors (1 shape or color per group; each group should have a different color or shape)
- 4 sheets of bulletin board paper (cut so students can work on the paper around a table)
- Markers and pens

Preparation

1. Arrange your meeting space so that each of the 4 groups described in the next bullet can work around their own table. Provide sufficient space between groups so that students can move around.
2. Label each sheet of bulletin paper with the name of one of the stakeholder roles from the previous lesson (Game Developer, Artist, the Business/Marketing Expert, and Psychologist/Health Advocate). Place one sheet at each table.
3. The students will be working in groups according to the stakeholder roles they held in the previous lesson. If this gives you groups of more than 6 students, you might decide to split those groups. If so, prepare extra sheets of bulletin board paper so that each group can have their own sheet.

Procedure

PART ONE	
1	**Say:** *In our last meeting, we worked in groups to apply research about the video game world to the process of brainstorming challenges. Today, we're going to use those ideas to practice the Future Problem Solving format for challenge writing. You will need your **Stakeholder Activity Sheets** and the **Stakeholder Impact Grids** from the last lesson.*
2	Instruct the students to break into groups according to the stakeholder roles they held in the previous lesson or according to groups you have pre-determined if the groups are too big (see Preparation). For example, all Game Developers will be in one group.
3	Distribute the sticky notes. Explain that they will use the sticky notes to write out their ideas in the Future Problem Solving format. When finished, they will put the complete challenges on the bulletin board paper for their stakeholder group.
4	**Say:** *Before we get started, let's review the requirements for writing challenges. Who remembers what they are?*
5	Students might respond with: • States what the challenge is and explains why it is a challenge. • Has a cause, effect, and consequence. • It is clearly written, concise, and free of unnecessary information. • Incorporates research and vocabulary from the future scene and topic resources. • Avoids extreme language or absolutes, instead using hypothetical language like "may," "might," or "could."

Writing Challenges in Stakeholder Groups

Procedure part one, continued

Standards Addressed
Speaking & Listening
1, 2, 5, 6
Reading & Literacy
1, 4, 7, 8, 10
Writing
1, 2, 4, 5, 7, 9, 10
Language & Vocabulary
2, 3

PART ONE	
6	**Say:** *Since we aren't yet working with a future scene, write your challenges based on your research.*
7	Provide work time for students to write their challenges and add them to their paper.
8	You might want to circulate and make sure students are writing challenges correctly.

PART TWO	
1	**Say:** *Now that you've practiced writing challenges for your stakeholder group, you will have the chance to review another stakeholder group's work and provide feedback.*
2	Provide instruction as to how you want the groups to rotate to view another group's work.
3	**Say:** *Take your sticky notes to the other table and read that group's challenges. Rewrite any challenges that are incorrectly written on your sticky notes and post them beside the incorrect challenges. If you think of new ideas, add them to the stakeholder sheet!*
4	Provide work time for students to rewrite and add more challenges.
5	Allow time for groups to rotate to the tables they haven't seen, ending back at their own table.
6	Students should review any new ideas added to their work as well as the corrections of their work, asking questions if they disagree or need clarification. If they have ideas to add now, they can!

FUTURE Problem Solving
LESSON PLAN

Writing Challenges in Stakeholder Groups

M STEP 1 STEP 2

Closure

1. Ask the students what their takeaways about writing effective challenges are from the activity. They might give responses like:
   - I got to work with some students outside my usual Future Problem Solving team so I got some new perspectives on strategy.
   - I learned some new ideas for how to incorporate research and vocabulary.
   - I need to work on being clearer when stating why something is a challenge. This was a great review on how to do it!
   - My feedback showed me that I've improved a lot on being concise in my writing. I'm feeling really encouraged!
2. **Say:** *You all had some great practice writing challenges! Remember to follow the Future Problem Solving format requirements so you can write challenges that will lay the foundation for the rest of the process.*
3. **Say:** *Before we leave this activity, let's do a little prep work for Step 2 in the Future Problem Solving: selecting an underlying problem. The underlying problem should be a significant issue in the future scene related to the future scene charge. One way to practice looking for significant issues is to examine your topic research! I want you to examine the* ***Research Wall****, the challenges on these sheets of bulletin board paper, and your own notes and handouts related to Video Games and identify what you think are some of the most important issues for video games today. Walk around the room. Work with other students. Look at your own papers. For any important issue on the* ***Research Wall*** *or bulletin board paper, use a marker to draw a star on it. For any important issue you find in your own papers that's not already on the wall or bulletin board paper, write the idea on a sticky note, draw a star on it, and post it on the* ***Research Wall****.*
4. Provide work time.
5. Lead a discussion on what students think are the important issues and the reasons those issues are important.
6. **Say:** *Now we are ready to move on to the next lesson!*

Standards Addressed
Speaking & Listening
1, 2, 5, 6
Reading & Literacy
1, 4, 7, 8, 10
Writing
1, 2, 4, 5, 7, 9, 10
Language & Vocabulary
2, 3

FUTURE Problem Solving LESSON PLAN

Underlying Problems from Challenges

M STEP 1 STEP 2

Objectives

- Students will brainstorm a variety of challenges related to their prior research on Video Games.
- Students will compose clear and relevant underlying problems based on their challenges.
- Students will assess underlying problems for proper form, major focus, connection to research, and clarity and provide constructive feedback to peers.
- Students will revise their underlying problems based on peer feedback.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 4, 7, 10
Writing
1, 2, 4, 5, 10
Language & Vocabulary
2, 3

Materials

- **Level One: Challenge Speed Round** cards, 1 per student, half-sheet (page 39)
- Blank paper or sticky notes (see Preparation)
- **Level Two: Powering UP**, 1 per team, 2 pages (pages 40-41)
- **Level Three: Co-op Mode**, 1 per team (page 42)
- **Level Four: You're a Winner!,** 1 per team (page 43)
- Timer

Preparation

1. Determine how you will divide students into teams.
2. Prepare materials for brainstorming: one sheet of blank paper per group if they are all writing on the same sheet, 1 sheet of blank paper per student if they are writing brainstormed ideas on their own paper, or sticky notes.
3. Photocopy **Level One: Challenge Speed Round** and cut out the cards.
4. Teams will be swapping **Level Two** and **Level Three** handouts. If you have an odd number of teams, be prepared to supervise the swap so that every team's work gets checked by another team.

Procedure

INTRODUCTION	
1	**Say:** *Today, we're going to play the Ultimate Underlying Problem Quest! While an underlying problem is based on a central issue from the future scene, we can also use your topic research and the topic themes to practice this step in the Future Problem Solving process.*
2	**Ask:** *Who remembers the parts of an underlying problem and what they do?* Students might give answers like: • Condition Phrase: Sets the context and gives the reason for doing the action in the key verb phrase • Stem: Introduces the main challenge with "How might we..." or "In what ways might we…?" • Key Verb Phrase: Specifies the action for solutions to address, has one verb phrase • Purpose: States the desired outcome or goal, beginning with "so that" or "in order to" • Future Scene Parameters: time, place, and topic of the future scene.

FUTURE Problem Solving
LESSON PLAN

Underlying Problems from Challenges

M STEP 1 STEP 2

Procedure, continued

LEVEL ONE	
1	Divide the class into groups, as determined in Preparation.
2	**Say:** *Let's kick things off with a Challenge Speed Round of brainstorming. Remember the guidelines for generating ideas: Avoid criticism or praise, go for quantity, listen to others and piggyback off their ideas, and stretch for wild and silly ideas.*
3	Distribute the **Level One: Challenge Speed Round** cards. Review the directions.
4	Distribute materials for brainstorming as you determined in Preparation.
5	**Say:** *I'll set a timer for five minutes. During that time, you and your team will work to generate as many challenges as you can. Are you ready? Then: Ready, set, GO!*
6	Set a timer for five minutes. Give a one-minute warning.
7	**Say:** *Time's up! Count your ideas. How many did each group get?*
8	Allow groups to share the number of ideas. **Say:** *Remember that at any time, you can add ideas to your brainstormed list.*

LEVEL TWO	
1	**Say:** *Congratulations! Your team has leveled up!*
2	Distribute **Level Two: Powering UP**
3	**Say:** *You should be on the front of this handout with the criteria for a good underlying problem.*
4	Review the directions.
5	**Say:** *Are you ready? Then, ready, set, GO!*
6	Set a timer for five minutes. Give a one-minute warning.
7	**Say:** *Time's up! Next, turn your paper over. On this side, you will work together to select one underlying problem to write in the proper Future Problem Solving format. Remember, your underlying problem should address a significant issue based on the challenges you identified.*
8	Allow teams to discuss, write, and refine their chosen underlying problem in the correct format.

LEVEL THREE	
1	**Say:** *Now it's time for cooperation in the Ultimate Underlying Problem Quest: getting feedback on your work!*

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 4, 7, 10
Writing
1, 2, 4, 5, 10
Language & Vocabulary
2, 3

Underlying Problems from Challenges

M STEP 1 STEP 2

Procedure part three, continued

LEVEL THREE	
2	Distribute **Level Three: Co-op Mode.** Review the directions. Example feedback includes: "Great connection between your key verb phrase and your purpose!" "I'm not sure what solutions for this action goal would look like. Could it be written clearer?" "You might want to use a more active verb in your key verb phrase." "Not sure your purpose follows from the key verb phrase. Will solutions easily address the key verb phrase and support the purpose?"
3	Supervise the swapping of the underlying problems. Provide work time.

LEVEL FOUR	
1	**Say:** *It's time to get **Level Three** underlying problems and feedback returned to the right teams.*
2	Allow students to return each other's papers.
3	Distribute **Level Four: You're a Winner.**
4	**Say:** *Review comments and feedback on your **Level Three** underlying problem page and make any necessary revisions on the **Level Four** page.*
5	Provide work time.
6	Ask each group to share their final underlying problem with the class.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 4, 7, 10
Writing
1, 2, 4, 5, 10
Language & Vocabulary
2, 3

Closure

1. Ask the students what strategies helped them craft a solid underlying problem. Possible responses might include:
   - We looked for repeated topics and themes in our challenges to decide which issue to focus on.
   - We evaluated each underlying problem element to determine which of our brainstormed underlying problems best met the criteria.
   - If we had trouble deciding between two ideas, we considered which one would have the biggest impact on the topic of video games.
2. **Say:** *Congratulations! You've completed the Ultimate Underlying Problem Quest! The strategies you used today will be invaluable as you tackle the biggest quest of all: completing the Future Problem Solving process for your Qualifying Problem booklet.*

Name _____

Level One - Challenge Speed Round

The adventure begins! You will have five minutes from the time the clock starts to brainstorm as many challenges related to the topic of Video Games as you can.

Things to keep in mind on your adventure

- **This is a brainstorming exercise!** You don't have to worry about writing in the challenge format yet. The objective is to come up with as many possible challenges as you can.
- **Think about the major themes from the research:** Healthy gaming, games and culture, the economy of gaming, and what's next in gaming. Use these topics as a jumping-off point for your ideas.
- **Remember research, challenges, and important issues** you identified in the last lessons.
- **Don't forget the Future Problem Solving Categories List!** If you get stuck, think about the categories we've explored as a tool for coming up with more diverse ideas.

Name _____

Level One - Challenge Speed Round

The adventure begins! You will have five minutes from the time the clock starts to brainstorm as many challenges related to the topic of Video Games as you can.

Things to keep in mind on your adventure

- **This is a brainstorming exercise!** You don't have to worry about writing in the challenge format yet. The objective is to come up with as many possible challenges as you can.
- **Think about the major themes from the research:** Healthy gaming, games and culture, the economy of gaming, and what's next in gaming. Use these topics as a jumping-off point for your ideas.
- **Remember research, challenges, and important issues** you identified in the last lessons.
- **Don't forget the Future Problem Solving Categories List!** If you get stuck, think about the categories we've explored as a tool for coming up with more diverse ideas.

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Video Games - **Ultimate Underlying Problem Quest** 39

Name _____

Level Two - Powering “UP”

You've advanced to Level 2! Way to go!

Which of your brainstormed challenges from Level 1 would make good underlying problems? The clock is going to start again, and this time, you'll use the challenges your group brainstormed to identify as many underlying problem ideas as you can. You do **not** have to write them in the correct form yet.

Remember the criteria for a good underlying problem

1. Focuses on a significant issue, not an isolated challenge
2. Clearly linked to the trends uncovered in your research (or the future scene)
3. Avoids being vague or trying to tackle too many topics at once

Issues for significant underlying problems

Name _____

Level Two - Powering "UP"

Well done! To finish this level, select one of your underlying problem ideas and work together to write it in the correct underlying problem format.

Remember the key elements of an underlying problem

- **Condition phrase:** References the situation or issue from the future scene or research
- **Stem:** "How might we…" or "in what ways might we…"
- **Key verb phrase:** Indicates the action to be taken with one action verb
- **Purpose:** Describes the intended outcome or goal of addressing the underlying problem, starts with "so that" or "in order to"
- **Parameters:** time, topic, and place.

Our group underlying problem

Name _____

Level Three - Co-op Mode

Woohoo! You've advanced to Level 3! To succeed at this level, you'll give another team feedback on their underlying problem.

Names of that team's members: _____

Directions

1. Exchange your **Level Two: Powering "UP"** sheet with another team.
2. Now, read the group's underlying problem and put a star next to the criteria the underlying problem meets. Give additional feedback as necessary.
3. Return this page to the original team. Get your **Level Two** sheet back from the team that has it.

☐ Focuses on a single, major issue

☐ Is linked to trends in the future scene or research

☐ Is clear and specific

Includes ALL the elements:

☐ **Condition phrase** (References the situation or issue from the future scene or research)

☐ **Stem** ("How might we…" or "in what ways might we…")

☐ **Key verb phrase** (Indicates the action to be taken – with one action verb)

☐ **Purpose** (Describes the intended outcome or goal of addressing the underlying problem)

☐ **Parameters** (The time, topic, and place)

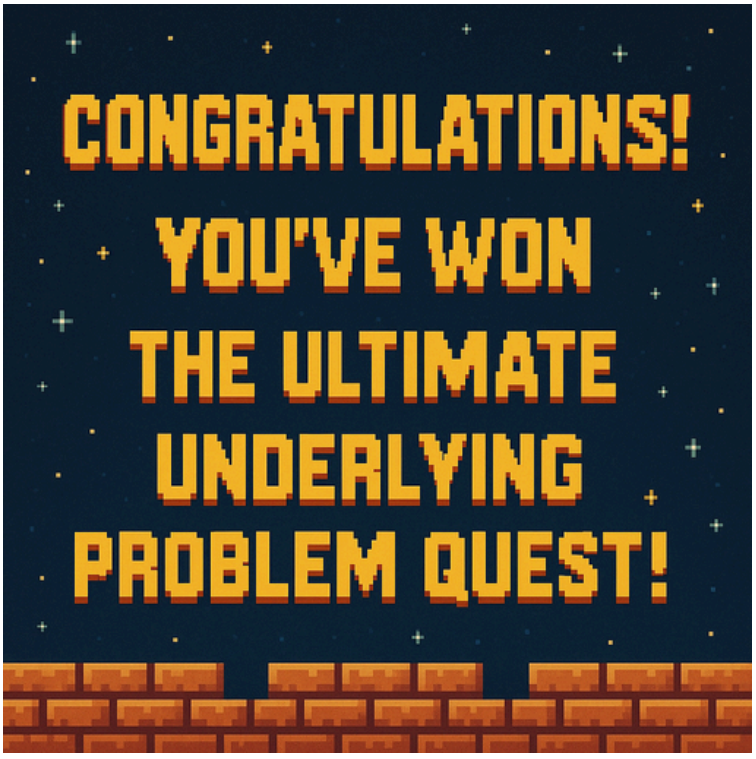
Additional feedback

Name _____

Level Four - You're a Winner!

Directions: Review the feedback you received on your underlying problem and make any necessary changes so you're ready to share it with the class.

Revised underlying problem



FUTURE Problem Solving LESSON PLAN

A Game to Practice Underlying Problems

M STEP 2

Objectives

- Students will analyze Video Games challenges and use their analysis in composing underlying problems.
- Students will collaboratively compose and revise elements of an effective underlying problem using the Future Problem Solving framework.
- Students will evaluate underlying problems on their merits for solution-finding.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
1, 2, 4, 5, 7, 10
Language & Vocabulary
1, 2, 3

Materials

- **UPstarter Cards**, cut into 9 separate cards (page 46)
- Several colors of pencils or pens (one or two per group)
- **Mystery Solved - Our Underlying Problem**, 9; 1 per UPstarter card (page 47)
- **UPstarter Cards to Underlying Problems - Answer Key,** 1 for coach reference (pages 48-49)
- Timer

Preparation

1. Photocopy and cut out the **UPstarter Cards.**
2. Review **How to Play** (below) so you will know how to direct the activity.
3. There are 9 **UPstarter Cards.** Determine how to divide the students into groups of 2 or 3 students each. Examples: If you can make 9 groups, you can use all the cards at once. If you can only make 3 groups, you could do three rounds of writing underlying problems. If you have 4 groups, you could leave off one of the cards and have two rounds. Devise other arrangements as needed.

Procedure

1	**Say:** *Today, we will become detectives unraveling the mystery of a strong underlying problem for Video Games. You will practice writing different parts of an underlying problem, which will provide clues for the creation of the best underlying problem possible.*
2	Divide the students into groups as determined.
3	Go over the instructions for the activity (below).
4	Distribute one **UPstarter Card** and a **Mystery Solved - Our Underlying Problem** sheet to each group. Instruct students to write the number of the card at the top of the sheet.
5	Direct the game, discuss the underlying problems developed, repeat as necessary.

FUTURE Problem Solving LESSON PLAN

A Game to Practice Underlying Problems

M STEP 2

How to Play

1. The goal of this activity is to take a challenge – called the **UPstarter Card** – and turn it into an underlying problem. The twist is you will be writing only one part of the underlying problem for each challenge, either the condition phrase, the stem and key verb phrase, the purpose, or the future scene parameters.
2. Your group will start with one card and a sheet for writing the assigned part of the underlying problem, called **Mystery Solved – Our Underlying Problem**. You will have 3-5 minutes to write that one part of the underlying problem, then you will pass the card and the **Mystery Solved** sheet the group on your right.

- **Step 1:** Each group writes a key verb phrase for their **UPstarter Card**. The card and the **Mystery Solved: Our Underlying Problem** sheet are then passed to the group on the right.
- **Step 2:** Each group writes a purpose for the next **UPstarter Card** they receive. The card and the **Mystery Solved** sheet are passed to the group on the right.
- **Step 3**: Each group writes a condition phrase for the next **UPstarter card** they receive. The card and the **Mystery Solved** sheet are passed to the group on the right.
- **Step 4**: Each group uses a colored pencil or pen to insert parameters at appropriate places in the UP. The card and the **Mystery Solved** sheet are passed to the group on the right.
- **Step 5:** Each group takes the completed underlying problem and makes any revisions they think are necessary to the underlying problem in a different color of pencil or pen.
- At this point, the groups will read aloud the underlying problems they now have with their revisions.
- Discuss the merit of the underlying problems. Is it written correctly with all the parts and no connecting words like “and” or “or”? Does the key verb phrase include an action verb? Would this underlying problem be a good one for solution-finding in Step 3? Do you think you could you find a lot of solutions? Would the solutions be about video games or could they veer off in in another direction?
- If there are enough cards for another round, repeat the game.

Standards Addressed
Speaking & Listening
1, 2, 4, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
1, 2, 4, 5, 7, 10
Language & Vocabulary
1, 2, 3

Closure

1. Ask the students how the game helped them to write better underlying problems. They might give answers like:
   - Getting a random challenge to work with reminded me of reading the future scene at the beginning of the Future Problem Solving process. I liked practicing with a situation I hadn't seen before.
   - I learned how to apply what I know from the research to writing an underlying problem about the challenges.
   - I liked seeing the different approaches to the underlying problem. The key verb phrase really makes a difference.
2. **Say:** *Great work on writing underlying problems. Let’s post each UPstarter card with its Mystery Solved sheet on our Research Wall so we can continue to refer to these as needed.* (Students can help with this.)

Name _____

UPstarter Cards

1. Alex, a 17-year-old high school student in Brazil, spends over 10 hours daily playing video games in 2043. Virtual School homework is left incomplete, family dinners are skipped, and Alex's physical health is declining due to long hours sitting in one position. Despite these issues, Alex insists gaming is her only escape from the stress of school and social pressures.	2. A 2023 health study highlights that children in the U.S. who spend over four hours daily playing video games show signs of sleep deprivation and reduced academic performance. Parents and educators are raising concerns, but many children resist limits on their gaming time, claiming it's their primary form of entertainment and social interaction.
3. Ryan, a college student in London struggling with anxiety in 2044, has found comfort in playing cooperative video games with his friends. The sense of accomplishment and teamwork helps manage his stress. However, Ryan's parents worry that this reliance on games might hinder his ability to cope with stress in other areas of life.	4. An independent game studio in Texas spent years prior to 2042 creating an innovative game that uses compelling virtual reality graphics and unique storytelling, pouring millions of dollars into its development. Despite good reviews prior to launch, poor marketing and lack of exposure resulted in the game's failure, forcing the studio to close and leaving its employees unemployed.
5. A leading gaming company in Australia in 2050 announces plans to replace human artists and coders with newly-perfected AI technology to streamline repetitive tasks. While the company claims this will lead to faster production and reduced costs, many workers fear job losses and question the ethics of using AI trained on their own creative work without compensation.	6. In 2044, Esports are becoming a booming industry worldwide, with players earning millions in tournaments. Schools are beginning to consider Esports as official extracurricular activities but face resistance from parents and administrators who believe gaming has little educational or career value compared to traditional sports.
7 Mark, a gamer with a physical disability, struggles to play many popular video games due to a lack of accessibility options. Features like customizable controls and visual aids are missing, excluding Mark and others from enjoying the top games of 2044 that everyone else is talking about.	8. In 2045, a heated debate arose when a popular cultural critic claimed that video games are not art but mere entertainment. Gamers and game developers argue otherwise, highlighting he intricate narratives, breathtaking visuals, and emotional resonance of many games. Meanwhile, museums and galleries are divided on whether to showcase games as art.
9. In 2042, a major game release sparks backlash for its depiction of some cultures. Critics call out the use of stereotypes and lack of consultation with cultural experts. Players from these cultures feel alienated, while the developers insist their depictions were meant to be "creative interpretations."	

Name _____

Mystery Solved - Our Underlying Problem

Mystery Solved - Our Underlying Problem **Card #_____**

Directions: Examine the UPstarter card. From this idea, you will create one part of a related underlying problem. Write **only the one part** that has been assigned to you. You will be passing the UPstarter card and this sheet to another group when your coach tells you to and writing a different part of a different underlying problem.

Condition phrase: Because

Stem and key verb phrase: In what ways might we

Purpose: So that

Future scene parameters: Insert time, place, and topic with a colored pencil or pen where appropriate in the underlying problem shown above.

FUTURE Problem Solving
ANSWER KEY

UPstarter Cards to Underlying Problems

Examples for possible underlying problems are shown. Students may have underlying problems with a different focus.

1. Alex, a 17-year-old high school student in Brazil, spends over 10 hours daily playing video games in 2043. Virtual School homework is left incomplete, family dinners are skipped, and Alex's physical health is declining due to long hours sitting in one position. Despite these issues, Alex insists gaming is her only escape from the stress of school and social pressures.	**Answer:** Because some students spend over 10 hours daily playing video games, they may be neglecting their homework, their family, and their physical health. In what ways might we reduce the number of hours students play video games each day in Brazil so that they will have time to participate in other stress-relieving activities in 2043 and beyond?
2. A 2023 health study highlights that children in the U.S. who spend over four hours daily playing video games show signs of sleep deprivation and reduced academic performance. Parents and educators are raising concerns, but many children resist limits on their gaming time, claiming it's their primary form of entertainment and social interaction.	**Answer:** Because children in the U.S. who spend over four hours daily playing video games show signs of sleep deprivation and reduced academic performance, how might we balance game time with other forms of social interaction so that children will be more likely accept limits on game time in 2023 and beyond?
3. Ryan, a college student in London struggling with anxiety in 2044, has found comfort in playing cooperative video games with his friends. The sense of accomplishment and teamwork helps manage his stress. However, Ryan's parents worry that this reliance on games might hinder his ability to cope with stress in other areas of life.	**Answer:** Because students in London struggling with anxiety in 2044 often find comfort in playing cooperative video games but may not have the ability to cope with stress in other areas of life, in what ways might we support the inclusion of stress-coping mechanisms in video games so that students who rely on video games for stress management will learn specific coping skills for stress relief?
4. An independent game studio in Texas spent years prior to 2042 creating an innovative game that uses compelling virtual reality graphics and unique storytelling, pouring millions of dollars into its development. Despite good reviews prior to launch, poor marketing and lack of exposure resulted in the game's failure, forcing the studio to close and leaving its employees unemployed.	**Answer:** Because a very good video game in Texas bombed in spite of the amount of money spent on production, in what ways might we improve marketing strategies for independent game studios so that they may remain in business in 2042 and beyond?

UPstarter Cards to Underlying Problems

5. A leading gaming company in Australia in 2050 announces plans to replace human artists and coders with newly-perfected AI technology to streamline repetitive tasks. While the company claims this will lead to faster production and reduced costs, many workers fear job losses and question the ethics of using AI trained on their own creative work without compensation.	**Answer:** Because some video game companies may be planning to replace human artists and coders with AI in 2050, how might we limit the use of AI in video game development so that human workers in Australia will not lose their jobs in 2050 and beyond?
6. In 2044, Esports are becoming a booming industry worldwide, with players earning millions in tournaments. Schools are beginning to consider Esports as official extracurricular activities but face resistance from parents and administrators who believe gaming has little educational or career value compared to traditional sports."	**Answer:** Because some parents and administrators believe gaming has little educational or career value compared to traditional sports, in what ways might we convince them that Esports can be just as valuable as traditional sports in 2044 so that schools around the world will consider offering Esports as extracurricular activities?
7 Mark, a gamer with a physical disability, struggles to play many popular video games due to a lack of accessibility options. Features like customizable controls and visual aids are missing, excluding Mark and others from enjoying the top games of 2044 that everyone else is talking about.	**Answer:** Because gamers with physical challenges may struggle to play popular video games due to lack of accessibility options, in what ways might we increase accessibility options in video games in 2044 so that anyone who wants to can enjoy the top games everyone is talking about?
8. In 2045, a heated debate arose when a popular cultural critic claimed that video games are not art but mere entertainment. Gamers and game developers argue otherwise, highlighting he intricate narratives, breathtaking visuals, and emotional resonance of many games. Meanwhile, museums and galleries are divided on whether to showcase games as art.	**Answer:** Since museums and galleries are divided on whether to showcase games as art, in what ways might we demonstrate that video games are more than entertainment so that video games will get the cultural recognition they deserve in 2045 and beyond?
9. In 2042, a major game release sparks backlash for its depiction of some cultures. Critics call out the use of stereotypes and lack of consultation with cultural experts. Players from these cultures feel alienated, while the developers insist their depictions were meant to be "creative interpretations."	**Answer:** Since poor representations of some cultures in video games may spark backlash, in what ways might we promote positive representation of all cultures in video games so that players can enjoy all games without feeling alienated in 2042 and beyond?

FUTURE Problem Solving LESSON PLAN

Design Your Own Research-Based Video Game

R STEP 2 STEP 3

Objectives

- Students will analyze their research on Video Games to identify a potential underlying issue that could be solved with a video game.
- Students will select an underlying problem and write it in the correct format.
- Students will practice teamwork skills by working together to create the game.

Standards Addressed
Speaking & Listening
1, 2, 4, 5, 6
Reading & Literacy
1, 7, 10
Writing
1, 2, 4, 7, 8, 10
Language & Vocabulary
1, 2, 3

Materials

- **Design Your Own Research-Based Video Game** (1 per team, 2 pages (52-53)
- Markers, colored pencils, etc., for designing the team's video game character.
  - Students could also use digital tools.
- Posterboard for drawing the game concept art (1 per team)

Preparation

1. Optional: Post the assignment in Procedures #2 where students can see it.
2. Assemble art supplies and poster boards for each group.
3. Determine how to divide the students into teams.

Procedure

1	**Say:** *Video games are such a part of our culture today that you've all probably had some kind of experience with them. But as we've seen through our research, they're much more than just a source of fun. Today, I want you to apply what you know about video games to develop an underlying problem that could have a video game solution!*
2	**Say:** *You are going to have to stretch your brains for this activity. Here is the assignment: Identify an underlying problem that addresses one of the concerns you've learned in your video games research. Create a video game that solves the problem you identify.*
3	**Say:** *Let me give you a non-example first, then we are going to spend some time brainstorming areas of concern where a video game could be a solution. How could a video game be a solution to this underlying problem?* Non-example: *Because a very good video game bombed in spite of the amount of money spent on production, in what ways might we improve marketing strategies for independent game studios so that they may remain in business in 2042 and beyond?*
4	Entertain student comments.
5	**Say:** *Now let's think of some issues that would be better for a video game solution. We don't have to say a correctly written underlying problem yet, just issues from research.*

FUTURE Problem Solving LESSON PLAN

Design Your Own Research-Based Video Game

R STEP 2 STEP 3

Procedure, continued

6	Entertain student ideas. Here are some examples; students may think of many others. For clarity, you may want to ask how their suggested video game might solve the problem and what the goal of the suggested game would be. An underlying problem about: • Kids are spending so much time playing video games that it is affecting their relationships and school work. • People with disabilities may have trouble accessing some games. • Some people are using video games for stress relief but then may not know how to cope in real life. • Some parents and educators think video games have no educational value. • Some parents and educators think esports are not as valuable as traditional sports. • Poor representation of some groups of people in video games. • Online bullying during multi-player video game.
7	Divide the class into teams and distribute **Design Your Own Research-Based Video Game**. Review the directions.
8	Provide work time for each group to design their game.

Standards Addressed
Speaking & Listening
1, 2, 4, 5, 6
Reading & Literacy
1, 7, 10
Writing
1, 2, 4, 7, 8, 10
Language & Vocabulary
1, 2, 3

Closure

1. Allow groups to share their games, using the information they have included on the activity sheets.
2. **Ask:** "How was participating in this activity like doing a Global Issues booklet?"
   a. Possible answers:
      - We had to apply our research.
      - We had to work together and divide the work according to strengths.
      - We had to make sure our game solved the key verb phrase and supported the purpose.
      - We had to elaborate our solution.
3. Allow students to hang their poster board concept art around the room.

Coaching Tip

If you need to explain "concept art": The initial sketches and illustrations that visualize the look and style of a game's key elements like characters, environments, and props. It serves as a visual blueprint for the game's development before full production begins. Concept art establishes the overall aesthetic and atmosphere of the game.

Name _____

Design Your Own Research-Based Video Game

Assignment: Identify an underlying problem that addresses one of the concerns you've learned about in your video games research. Create a video game that solves the problem you identify.

Team Names: _____

Our underlying problem from Video Games research

A brief description of the video game that would solve this underlying problem

Explanation of how this video game would solve the underlying problem

The name of our game _____

The name(s) of our main character(s) _____

Physical description of one of the main characters

Origin story

Name _____

Design Your Own Research-Based Video Game

STEP 2 STEP 3

Special abilities or superpowers

Draw your main character in the space below or create it using computer illustration and paste it here. Think about how you might you show the character's superpowers through your artwork.

Game Details

Storyline

Game objective

Use a poster board and markers to create concept art for a key scene from the game.

FUTURE Problem Solving LESSON PLAN

A Memory Tool for Solution Writing

T STEP 3

Objectives

- Students will review how to write solutions.
- Students will design a tactile tool to help them remember how to write solutions.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
1, 2, 4, 7, 10
Language & Vocabulary
2, 3

Materials

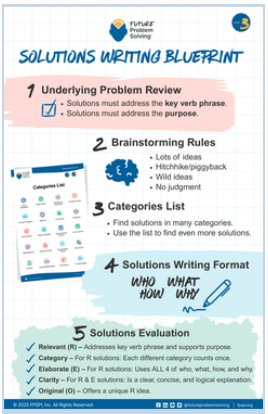
- Choose one:
  - One glove for each student or team
  - Construction paper on which to design a glove (1 per student)
- A glove for coach (to wear when presenting first part of lesson)
- Craft glue
- Markers and other craft materials
- A way to display the **Solution Writing Format for Data Gloves** (page 55)
- **A Memory Tool for Solution Writing – Try It Out!**, 1 per student (page 56)

Preparation

1. Determine if you will purchase enough gloves for each student or team to have one, or if students will be drawing and designing their own two-dimensional glove on construction paper. (If you purchase gloves, large gloves from a building supply or hardware store will provide lots of room for creativity.)
2. Prepare the **Solution Writing Format for Data Gloves** for display.
3. Determine if you want students to work individually, in partners, or small groups.
4. Determine how you will display the **Solution Writing Format for Data Gloves**.

Procedure

PART ONE	
1	Display a glove on your hand. **Ask:** *Has anyone ever used a data glove when playing a video game based on VR or AR?*
2	Entertain student responses.
3	**Say:** *A data glove is a wearable device that tracks hand movements and gestures to provide input to virtual reality (VR) and augmented reality (AR) systems, including video games. Data gloves capture hand movements and transfer them into useful information.*
4	**Say:** *The objective of this lesson is to design a creative 'Solution Data Glove.' Each finger of the glove will remind you of the important components of an elaborate solution. Research shows that tactile, hands-on activities enhance memory and understanding. Concepts learned through hands-on experiences like the one we are going to do are more likely to be remembered and applied in future contexts.*
5	**Say:** *So let's review solution writing before designing our gloves.*
6	Display the **Solution Writing Format for Data Gloves** (shown below). Beginning with the thumb, review the solution writing format. Allow students further explain each part.



Coaching Tip

Use additional Resources Library tools like the Solutions Writing Blueprint poster to provide additional inspiration for your students and reinforce the components of a well-written solution.

FUTURE Problem Solving LESSON PLAN

A Memory Tool for Solution Writing

T STEP 3

Procedure, continued

7	If using a real glove, distribute the gloves and allow students to share ideas on how they might place designs on the glove to help them remember the solution writing format.
8	If students are designing a two-dimensional glove on paper, distribute the construction paper. Suggest to students that they might want to trace their own hand on the paper for the outline for their glove. Allow them to share ideas on how they might place designs on the glove and/or paper to help them remember the solution writing format.
9	Design Time: Provide time and creative materials for glove design.

Solution Writing Format for Data Gloves
Thumb: **WHO** will create or implement the solution
Index finger: **WHAT** the solution is.
Center finger: **HOW** it works. Give a detail.
Ring finger: **WHY** it addresses the key verb phrase
Little finger: **WHY** it supports the purpose
Palm: **WILL** is the verb to use

PART TWO	
1	Allow students time to present their gloves to the whole group.
2	**Say:** *Now that you've designed a glove with reminders about writing solutions, let's use them to write some real solutions!*
3	Instruct students on whether they are to work individually, in partners, or in small groups as determined in Preparation.
4	Distribute: **A Memory Tool for Solution Writing – Try It Out!** and review the instructions.
5	Provide work time.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
1, 2, 4, 7, 10
Language & Vocabulary
2, 3

Closure

1. Instruct students to exchange papers for peer review. Remind them to use their **Solution Data Gloves** to check each other's solutions.
2. Circulate among the students so they can ask you questions about this part of the activity.

Name _____

A Memory Tool for Solution Writing – Try It Out!

Directions: Using the following underlying problem, brainstorm three solutions, then practice writing elaborate solutions using your newly designed **Solution Writing Data Glove**. Remember the Categories List!

Underlying problem
Because some gamers experience harassment when playing multiplayer video games, in what ways might we enhance online safety measures during game play so that the emotional toll of harassment will be reduced in 2040 and beyond?

Solution One

Solution Two

Solution Three

FUTURE Problem Solving LESSON PLAN

Develop an Addiction to Solutions

STEP 3

Objectives

- Students will analyze solutions and evaluate them according to the Future Problem Solving evaluation criteria.
- Students will provide constructive feedback to improve the quality of relevant solutions that do not meet the criteria for elaborated solutions.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
1, 2, 4, 5, 10
Writing
1, 2, 4, 5, 7, 10
Language & Vocabulary
1, 2, 3

Materials

- A way to display Solution Evaluation Criteria (shown below in procedure 3)
- Solution Data Gloves (from previous lesson; students should have their own)
- **A Solution Writing Analysis**, 1 per student, 2 pages (pages 59-60)
- **A Solution Writing Analysis – Answer Key**,1 for coach reference (pages 61-62)

Preparation

1. Decide whether students will work individually or in teams.

Procedure

1	**Say:** *Much of the Video Game research suggests that there are many benefits from playing video games, as long as the games are played in moderation. Research states that for a video game to be classified as addictive, one must engage in it for at least 15 to 20 hours each week, which amounts to three hours each day. The research notes that this sort of play can cause lasting damage to people's health and well-being, including their relationships and productivity.*
2	**Say:** *For this activity, you'll be using your **Solution Data Gloves** again, but you'll also be using evaluation criteria for solutions.*
3	Share the following quick review. Remind students that their **Solution Data Gloves** will help them determine elaboration if a solution is elaborated. **Solution evaluation criteria** **RELEVANCE:** The solution addresses the key verb phrase and supports the purpose. **ELABORATION:** The solution provides details **Who:** Identify who will create or implement the solution. **What:** Explain what will be done. **How:** Describe how the solution will work. **Why:** Explain how it addresses the key Verb phrase and supports the purpose. **FLEXIBILITY:** Solutions are written from different perspectives using the Future Problem Solving Category List. **ORIGINALITY:** Solutions that are one of a kind may be awarded originality points.
4	Instruct students as to whether they will be working individually or in small groups.
5	Distribute **A Solution Writing Analysis.**

FUTURE Problem Solving
LESSON PLAN

Develop an Addiction to Solutions

STEP 3

Procedure, continued

6	**Say:** *Press pause and carefully read the solutions generated by a team practicing for the qualifying problem. They hope to receive an invitation to their Affiliate Finals. Since they still have some time to practice, what advice can you give them? Remember to use your **Solution Data Glove** to determine if the solution is elaborate or not.*
7	**Say:** *Carefully read the underlying problem and each of the solutions. If a solution is relevant but not elaborated, rewrite the solution so it is elaborated.*
8	Provide work time.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
1, 2, 4, 5, 10
Writing
1, 2, 4, 5, 7, 10
Language & Vocabulary
1, 2, 3

Closure

1. Students will share their responses to the solution analysis and provide the reasoning for their decision.
2. Compare their responses to the **Answer Key**.

Name _____

A Solution Writing Analysis

Directions

1. Press pause and carefully read the solutions generated by a team practicing for the qualifying problem.
2. Evaluate each solution for relevance, elaboration, and originality.
3. Provide feedback, if needed, to improve relevant solutions.
4. If a relevant solution needs to be elaborated, write the elaborated solution in your feedback.

Underlying problem

Because the World Health Organization (WHO) has added a Gaming Disorder diagnosis to the International Classification of Diseases and because playing video games often takes priority over schoolwork, socialization, and physical activities, in what ways might we improve how teens monitor their time spent on video games so that they are able to pursue other activities outside of the online gaming world in 2035?

Solution One

1. Psychologists will create "Gamification Anonymous." This school-based counseling program is designed to help teens manage their gaming habits. The program will be available at school, and students can be recommended for the program by their teachers and parents. Through this program, counselors will work closely with teens to explore alternative activities such as joining school clubs, participating in sports, or exploring new hobbies and interests. By providing guidance and support, "Gamification Anonymous" will empower teens to monitor their time playing video games and lead a more balanced life.
☐ This solution is relevant.
☐ This solution is elaborate.
☐ This solution is original.
Feedback (if needed)

Solution Two

2. Google will create "The Video Game Pop-Up Time Reminder." It will be integrated into video games to help teens monitor their playing time.
☐ This solution is relevant.
☐ This solution is elaborate.
☐ This solution is original.
Feedback (if needed)

Name _____

A Solution Writing Analysis

Solution Three

3. Nintendo will develop an entrepreneur opportunity called “Create Your Own Video Game.” This opportunity will inspire gamers to code and create new and original games. Teens will be able to test their prototypes and share their games on YouTube and a special Nintendo website. They will be motivated to play games others have submitted to the competition and to improve their prototypes and creativity before the contest deadline.
☐ This solution is relevant.
☐ This solution is elaborate.
☐ This solution is original.
Feedback (if needed)

Solution Four

4. Physics Solutions Inc. will create “Time Travel - Your Future Self.” This immersive experience will transport teens into a futuristic scenario where they can see the long-term impact of video addiction. The virtual reality simulation will highlight what they might miss out on by prioritizing video games over extracurricular activities, pursuing personal interests, or fully engaging in their education. Through this experience, teens will visualize the benefits of monitoring their gaming time spent and make more intentional choices about trying other engaging activities.
☐ This solution is relevant.
☐ This solution is elaborate.
☐ This solution is original.
Feedback (if needed)

Solution Five

5. Teachers will receive professional development on integrating the gamification strategy into their lessons. This will keep students more motivated and engaged in their school work, and their grades will better reflect their potential.
☐ This solution is relevant.
☐ This solution is elaborate.
☐ This solution is original.
Feedback (if needed)

FUTURE Problem Solving
ANSWER KEY

A Solution Writing Analysis

STEP 3

Solution One

Psychologists will create “Gamification Anonymous.” This school-based counseling program is designed to help teens manage their gaming habits. The program will be available at school, and students can be recommended for the program by their teachers and parents. Through this program, counselors will work closely with teens to explore alternative activities such as joining school clubs, participating in sports, or exploring new hobbies and interests. By providing guidance and support, “Gamification Anonymous” will empower teens to monitor their time playing video games and lead a more balanced life.

X	This solution is relevant.
X	This solution is elaborate.
?	This solution is original.

A well-written solution. No feedback is required.
This solution may be considered original. What do you think?

Solution Two

Google will create “The Video Game Pop-Up Time Reminder.” It will be integrated into video games to help teens monitor their playing time.

X	This solution is relevant.
	This solution is elaborate.
	This solution is original.

Feedback: Add details to elaborate on this idea.
Example:
Google will develop “The Video Game Pop-Up Time Reminder,” a built in feature designed to regulate daily gaming time. This tool will integrate directly into video games to help teens monitor their play time and stay below the three-hour threshold associated with gaming addiction. This system will display countdown pop-ups to track time, freezing gameplay after two hours each day. This will encourage teens to explore other activities and interests by providing clear reminders and enforcing limits to provide more balanced game time

Solution Three

Nintendo will develop an entrepreneur opportunity called “Create Your Own Video Game.” This opportunity will inspire gamers to code and create new and original games. Teens will be able to test their prototypes and share their games on YouTube and a special Nintendo website. They will be motivated to play games others have submitted to the competition and to improve their prototypes and creativity before the contest deadline.

	This solution is relevant.
	This solution is elaborate.
	This solution is original.

Feedback: This solution is NOT relevant.
It does not address the key verb phrase or support the purpose.

Page 1 of 2 ⟶

FUTURE Problem Solving ANSWER KEY

A Solution Writing Analysis

STEP 3

Solution Four

Physics Solutions Inc. will create “Time Travel - Your Future Self.” This immersive experience will transport teens into a futuristic scenario where they can see the long-term impact of video addiction. The virtual reality simulation will highlight what they might miss out on by prioritizing video games over extracurricular activities, pursuing personal interests, or fully engaging in their education. Through this experience, teens will visualize the benefits of monitoring their gaming time spent and make more intentional choices about trying other engaging activities.	
X	This solution is relevant.
X	This solution is elaborate.
?	This solution is original.
A well-written solution. No feedback is required. **This solution may be considered original. What do you think?**	

Solution Five

Teachers will receive professional development on integrating the gamification strategy into their lessons. This will keep students more motivated and engaged in their schoolwork, and their grades will better reflect their potential.	
	This solution is relevant.
	This solution is elaborate.
	This solution is original.
Feedback: This solution is NOT relevant. **It does not address the key verb phrase or support the purpose.**	

FUTURE Problem Solving
LESSON PLAN

The Essentials of Criteria Writing

STEP 4

Objectives

- Students will review the format for correctly written criteria.
- Students will develop understanding of Applicable, Generic, and Targeted criteria.
- Students will evaluate example criteria according to the scoring guidelines.
- Students will compare elements of video game development to elements of criteria writing.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
1, 4, 5, 10
Language & Vocabulary
2, 3

Materials

- **Review the Essentials,** 1 per student (page 65)
- **Writing Quality Criteria,** 1 per student (page 66)
- **Review the Essentials/Writing Quality Criteria – Answer Key,** 1 for coach reference (page 67)
- **Brainstorming Analogy,** 1 per student (page 68)
- **Brainstorming Analogy – Answer Key,** 1 for coach reference (page 69)

Preparation

1. Students should work individually for **Review the Essentials** and **Writing Quality Criteria**.
2. Students should work together for the **Brainstorming Analogy** activity. You could just instruct them to work with other students sitting close to them. Otherwise, determine a way to group them for this activity.

Procedure

PART ONE	
1	**Say:** *Steps 4 and 5 of the Future Problem Solving process are important because they help you to select the one best solution for your underlying problem. Developing strong criteria that are relevant to what you are trying to accomplish is an important skill for any time you are making choices. It also might be an important task for video game developers, too! We are going to look at that after we review criteria.*
2	**Say:** *Let's start with reviewing the correct way to write criteria.*
3	Distribute **Review the Essentials**. Review the directions.
4	Provide work time.
5	Lead students through a check of their work.

PART TWO	
1	**Say:** *After judging criteria for being correctly written, the evaluator determines two more things for each criterion: 1) is the criterion applicable to the underlying problem? and, if it is, 2) is it a generic criterion or a targeted criterion?*
2	Distribute **Writing Quality Criteria**. Review the directions.
3	Provide work time.
4	Lead students through a check of their work.

FUTURE Problem Solving
LESSON PLAN

The Essentials of Criteria Writing

STEP 4

Procedure, continued

PART THREE	
1	**Say:** *What do criteria have to do with video games? Let's think about this. A video game developer is responsible for taking the game design and turning it into a playable game. The developer makes sure all the elements of a video game – storyline, characters, music, levels, programming, coding, testing – come together during game production, and the game is brought to life as an engaging and well-balanced experience.*
2	**Say:** *We are going to try to come up with some analogies between being a criteria writer and being a video game developer. An analogy is a comparison between two things, especially looking at what the two things have in common. In this activity, you will think about how the job of criteria writer compares to the job of a video game developer.*
3	If students are working in groups for this activity, instruct them in how to get into groups, as determined.
4	Distribute the **Brainstorming Analogy.** Review the directions.
5	Provide work time.
6	Lead students in a discussion about their brainstormed analogies.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
1, 2, 4, 7, 10
Writing
1, 4, 5, 10
Language & Vocabulary
2, 3

Closure

1. **Ask:** *Have you increased your understanding about criteria in this lesson?*
2. Allow students to share responses.

Name _____

Review the Essentials

Directions

Part One: Correctly written criteria

1. Circle yes if the criterion is correctly written or no if not.
2. If it is not correctly written, place a check mark beside the missing component.
   - Contains a superlative
   - Measures one dimension
   - Indicates a desired direction
   - Written as a question
3. Note: criteria that are written using the words “so that” are **not c**orrectly written, because they have introduced an additional concept and no longer have just one dimension

Criteria	Correctly Written		Missing
Hardest to implement	Yes	No	☐ Superlative ☐ One dimension ☐ Desired direction ☐ Written as a question
Which solution will excite video gamers?	Yes	No	☐ Superlative ☐ One dimension ☐ Desired direction ☐ Written as a question
Which solution is most affordable and well-designed for gamers?	Yes	No	☐ Superlative ☐ One dimension ☐ Desired direction ☐ Written as a question
Which solution provides the safest space for teens playing video games?	Yes	No	☐ Superlative ☐ One dimension ☐ Desired direction ☐ Written as a question
Which solution is the most inclusive for expanding social circles?	Yes	No	☐ Superlative ☐ One dimension ☐ Desired direction ☐ Written as a question
Which solution has the least chance of being successful in the gaming market?	Yes	No	☐ Superlative ☐ One dimension ☐ Desired direction ☐ Written as a question

Name _____

Writing Quality Criteria

Directions

Part Two: Writing quality criteria

1. Review the criteria listed on the table.
2. A criterion first has to be applicable/useful to the underlying problem. Place a check mark if it is.
3. Place a G if the criterion is generic. Generic criteria can be linked or used with any topic of study and any future scene.
   G = 1 Point awarded
4. Place a T if the criterion is Targeted. Targeted criteria go beyond generic ideas and are specific to the underlying problem, topic, and future scene. They may be based on the key verb phrase, the purpose, or information from the future scene or research that relates to the underlying problem.
   T = 3 points awarded
5. Note 1: A criterion is **not** applicable if it is not clear what is being measured, for example: Which solution will be most efficient? Evaluators want to know "efficient for what?"
6. Note 2: A criterion is **not** targeted if all it does is add stakeholders or future scene parameters to a generic criterion.

Use this underlying problem to judge the criteria in the chart.
Because video games have the potential to enhance classroom engagement and learning outcomes, in what ways might we support teachers in implementing this strategy so that students benefit from more interactive learning in 2037?

Criteria	Check if Applicable?	Generic (G) or Targeted (T)	Points
Which solution will best enhance student learning through gamification?	☐		
Which solution will cost the least to the school?	☐		
Which solution will be most acceptable to teachers?	☐		
Which solution will best support teachers in implementing this strategy?	☐		
Which solution will be most effective?	☐		
Which solution will be most beneficial to the students learning important concepts?	☐		
Which solution will get the most approval from the board of education to implement gamification in the school?	☐		
Which solution will be easiest to implement?	☐		

FUTURE Problem Solving
ANSWER KEY

Review the Essentials/Writing Quality Criteria

STEP 4

Part One: Correctly written criteria

Criteria	Correctly Written	Missing
Hardest to implement	**No**	Desired direction Written as a question
Which solution will excite video gamers?	**No**	Superlative
Which solution is most affordable and well-designed for gamers?	**No**	One dimension
Which solution provides the safest space for teens playing video games?	**Yes**	
Which solution is the most inclusive for expanding social circles?	**Yes**	
Which solution has the least chance of being successful in the gaming market?	**No**	Desired direction

Part Two: Writing quality criteria

Criteria	Check if Applicable?	Generic (G) or Targeted (T)	Points
Which solution will best enhance student learning through gamification?	✓	**T**	**3**
Which solution will cost the least to the school?	✓	**G**	**1**
Which solution will be most acceptable to teachers?	✓	**G**	**1**
Which solution will best support teachers in implementing this strategy?	✓	**T**	**3**
Which solution will be most effective?	**No**	**No**	**0**
Which solution will be most beneficial to the students learning important concepts?	✓	**T**	**3**
Which solution will get the most approval from the board of education to implement gamification in the school?	✓	**T**	**3**
Which solution will be easiest to implement?	✓	**G**	**1**

Name _____

Brainstorming Analogy

Directions
Write an analogy in each box that compares the job of video game developer to the job of a criteria writer.

Game developer
Criteria writer

Game developer
Criteria writer

Game developer
Criteria writer

Game developer
Criteria writer

FUTURE Problem Solving
ANSWER KEY

Brainstorming Analogy

Example answers are below. Students may come up with others!

A **video game developer** knows a clear structure will guide the video game player. **Criteria writers** know correctly written criteria guide the evaluation of solutions.Measures only one directive, such as cost, time, etc.Contains a superlative such as most, best, etc.Indicates a desired direction.Written as a question.
A **video game developer** makes sure there is a clear structure for points awarded during the game. **Criteria writers** make sure they know that points are provided according to the following structure. • Generic (1 point) • Targeted (3 points)
Video game developers have to keep the game goal in mind, such as achieving levels or exploring a storyline. **Criteria writers** have to keep the goal of the underlying problem in mind to develop criteria that focus on selecting the best solution to address the underlying problem and key verb phrase and support the purpose.
Video game developers should make consistent rules to ensure a smooth transition and an enjoyable game experience. **Criteria writers** should make consistent criteria to ensure that solutions are judged equally and the best solution is selected.
Video game developers must prioritize features that will have the most significant impact on the player's experience. **Criteria writers** write criteria to help prioritize solutions that best address the underlying problem.

A Fun Future Scene

Video Games – **Gaming in the Future** *(Topic Activity Unit)*

MetaMorphia Virtual Chat Transcript
May 15, 2050, 5:12 p.m. Pacific Time
San Diego, California

<Jake has logged on>

Maria: "Hey Jake! What's up?"

Jake: "Nothing much. What's new with you?"

Maria: "Only my fantastic new MetaForm! How do you like it? I've always wanted to have red, flowing hair and perfect skin. Now that MetaMorphia has added these super realistic avatar design features, it's like I actually do! Don't I look awesome?"

Jake: "Well..."

Maria: "Jake? What's the problem? You seemed kind of weird in math today—you didn't even laugh when Mrs. Wilson's HoloScreen frizzed up mid-sentence."

Jake: "It's just...my mom lost her job a couple of weeks ago."

Maria: "That's awful! What happened?"

Jake: "Well, that's the thing...she was a narrative designer for NeoSphere Entertainment. You know...the company that created MetaMorphia..."

Maria: "Oh wow. That...really stinks."

Jake: "Yeah. My mom loves designing video game characters and stories. It was what she always wanted to do since she was our age. She worked so hard, and now it's just been taken away. She hasn't been herself at all—last night, she even yelled at me for not putting my dishes in the HydraClean."

Maria: "No way! Your mom is like the nicest person ever."

Jake: "Tell that to my mom. She's also really stressed about us being unable to pay the bills with inflation and everything, and she doesn't know what other jobs she can do. She says she needs to 'pivot' or something. Everything is so messed up. Anyway...I don't really want to play MetaMorphia anymore."

Parameters

Time:

Place:

Topic:

Directions

1. Carefully read the future scene.
2. Each step of the 6-step process is abbreviated so that you can carefully review the Future Problem Solving process.
3. The action plan page provides an extended review, breaking down the components for writing an elaborate, well-developed action plan.

WARNING:
This is not the official future scene. DO NOT USE this future scene for your Qualifying Problem Video Game submission.

Page 1 of 2 ⟶

A Fun Future Scene

Video Games – **Gaming in the Future** *(Topic Activity Unit)*

Maria: "Jake, I get it...but don't you think you're overreacting? I mean, it's just a video game. Don't you care about how much fun we all have playing it? Especially the EcoSim challenges! Lucy thinks she might actually want to be a bioengineer because of the situations about climate change that it helps us find solutions for. You'll really miss out."

Jake: "I know. I'm just so stressed out about my mom to the point where this doesn't feel fun anymore. I feel like I'm participating in the thing that ruined her life to begin with. Mom said it's okay if I still want to play because of how many friends I have on MetaMorphia, but I can tell she's really sad."

Maria: "Wow. That's pretty serious. I could NEVER quit playing MetaMorphia! I bet I spend like half my week on here!"

Jake: "Yeah, well. It's not just about my mom. I mean, her passion for game design made me want to be an artist. But if they're just going to bring in a bunch of computers to do my job, then what's even the point?"

Maria: "Jake, you can't think like that! There has to be something we can do. Let's ask the Future Problem Solvers to identify a significant issue related to MetaMorphia and come up with a plan!"

WARNING:
This is not the official future scene. DO NOT USE this future scene for your Qualifying Problem Video Game submission.

← Page 2 of 2

Name _____

Step 1 - Identify Challenges

Directions

1. Carefully analyze the future scene and highlight areas that might become possible challenges.
2. Write four challenges following the Future Problem Solving guidelines.
3. Incorporate research and vocabulary.
4. Use the **Categories List** to help increase flexibility.

1.

2.

3.

4.

Name _____

Step 2 - Write an Underlying Problem

Directions

1. Carefully read the highlighted paragraph. It is called the “charge” and provides direction for the focus of your underlying problem.
2. Write an underlying problem that addresses the charge. This will serve as the basis for the rest of your booklet.

Name _____

Step 3 - Produce Solution Ideas

Directions

1. Carefully analyze your underlying problem and generate solution ideas that address the key verb phrase and support the purpose.
2. Write four elaborate solutions following the Future Problem Solving guidelines.
3. Incorporate research and vocabulary.
4. Use the **Categories List** to help increase flexibility.

1.

2.

3.

4.

Name _____

Step 4 and Step 5 - Select and Apply Criteria

Directions
Generate five criteria to use when determining which solution idea best solves the underlying problem and/or addresses the future scene situation.

- Written as a question: "Which solution will _____?"
- Has a superlative
- Addresses only one dimension
- Written in a positive direction

Create criteria

1.
2.
3.
4.
5.

Apply criteria

Write the four solution ideas from Step 3 briefly in the first column. Use each criterion to rank the solutions on a scale from 1 (poorest) to 4 (best).

Solutions	Criterion #1	Criterion #2	Criterion #3	Criterion #4	Criterion #5	Total

Our best solution

Name _____

Step 6 - Launching Your Action Plan Review

Step 6 - Writing an action plan review

Directions: Review the following important components of an action plan before creating your action plan.

Developing an action plan

- The action plan is based on the best solution identified in Step 5. It is better NOT to use the other solutions in developing the action plan. Stick to full development of your one best solution.
- The plan should describe the initial solution idea in Step 3 and present a detailed proposal for initiating the action, solving your underlying problem, and making a big impact on the future scene.

Stage One - Discussion of criteria
Measures the degree to which the criteria are addressed in selecting the best solution (2 -10 points)

Before you provide the details of your action plan, you need to explain how this solution became your best one out of the other chosen solutions. The following are some topics you might address:

- Why did this solution score higher than other top-scoring solutions on the criteria?
- Why is this solution better on most of the criteria and not as good on the others?
- What put this solution “over the top” compared to the other high-scoring solutions?

Stage Two - Completeness and clarity
Considers the extent of plan elaboration (Completeness: 2 -20 points, Clarity: 2-10 points)

The following are some topics to discuss:

- Explain your best solution in detail. Elaborate on your original solution. Include more details to give a full picture of what the solution entails. Include when and where!
- Consider obstacles and sources of resistance to implementing your action plan. How might you overcome these challenges?
- Describe how sources of assistance may be used to help your plan be successful.
- Include a timeline for implementation of your plan.

Stage Three - The relationship to the underlying problem
(Relationship: 2-10 points)

Evaluators will judge how well your action plan addresses your key verb phrase and supports the purpose of your underlying problem. Explain this specifically.

Stage Four - The impact on the future scene
(Impact: 2 - 20 points)

- Explain how your action plan positively impacts the future scene, especially the future scene charge.
- Include how your plan connects to the topic, too.

Name _____

Step 6 - Launching Your Action Plan Review

Stage Five - Humaneness
Positive/productive outcomes of the action plan (2 -10 points)

Throughout your explanation of your action plan, try to emphasize how good it will be for stakeholders in the future scene. You may also address this specifically.

Stage Six - Fundamental concepts
Scored for research applied (1-5 points), creative strength (1-5 points), futuristic thinking (1-5 points)

Evaluators want to see evidence of these concepts throughout your whole action plan.

- Try to pull in research concepts and ideas.
- Stretch to make your action plan different from the ordinary.
- Consider the time frame of the future scene, which will be in the future. Think through how your action plan might be easier to implement or improved because the future scene is in the future. Work that into your plan.

Name _____

Step 6 - Launching Your Action Plan Review

Directions

1. This is your opportunity to apply what you have learned as you write the action plan for the best solution identified in Step 6.
2. This step has been outlined in stages as a review of what should be included in an action plan.

Stage One - Discussion of criteria

Stage Two - Completeness and clarity

Stage Three - Relationship to the underlying problem

Page 1 of 2 ⟶

Name _____

Step 6: Launching Your Action Plan Review

Stage Four: The impact on the future scene

Stage Five: Humaneness: Positive/productive outcomes of the action plan

Stage Six: Fundamental concepts

Did your action plan address the following?

☐ Does it apply research?

☐ Does it have creative strength?

☐ Does it demonstrate futuristic thinking?

Save your booklet for the next activity.

FUTURE Problem Solving LESSON PLAN

Host an Action Plan Development Presentation Party

STEP 6

Objectives

- Students will create a slide presentation about their action plan from their **Gaming in the Future** practice booklet.
- Students will enhance descriptions of their action plan to convince their audience it is a good plan for solving their underlying problem.
- Students will apply creative thinking in developing a presentation that will be appealing to their audience.
- Students will work cooperatively with their team to produce the presentation.
- Students will practice good communication skills by working together and producing a clear and compelling presentation.

Standards Addressed
Speaking & Listening
1, 2, 4, 5, 6
Reading & Literacy
1, 2, 4, 7
Writing
1, 2, 4, 5, 6, 7, 10
Language & Vocabulary
2, 3

Materials

- Slide presentation software such as Google Sides, Microsoft PowerPoint, Canva, Keynote, Prezi, or others.
- Computer access for slide presentation development
- **Step 6: Launching Your Action Plan Review** and **Step 6: Launching Your Action Plan - Activity** from Gaming in the Future practice booklet (teams have these from the previous lesson)
- **Slide Suggestions for Coaches,** for coach reference (page 82)
- Song: "Celebrate" by Kool and the Gang: https://www.youtube.com/watch?v=clg6odS-fA0
- **Slide Suggestions for Students**, 1 per student (page 83)
- Snacks or treats for the party

Preparation

1. Determine how to present the presentation software to students. Suggestions:
   - Allow students to create their own presentation using their preferred software and present it to the class at the appropriate time.
   - You create one blank presentation to share with all students, assigning them specific slide numbers (recommendation: up to 7 slides per team).
   - Tell students which software to use in preparing their slide presentations. They would prepare their slides, then share with you for you to combine in one class presentation.
2. Prepare an introductory slide presentation for the celebration. See **Slide Suggestions for Coaches**.
3. Determine length of preparation time and when the party will be held.
4. Decide on details for the party, such as: Do you want students to dress up as their favorite video game characters? Do you want students to bring in snacks and drinks for the party? Will you invite guests to see the slide presentations? Do you want to set a time limit and a number of slides limit for each presentation? Will there be snacks during the presentations or afterwards?

FUTURE Problem Solving LESSON PLAN

Host an Action Plan Development Presentation Party

STEP 6

Procedure

1	Play the song "Celebrate" by Kool and the Gang.
2	**Say:** *Today, we are going to prepare for an action plan slide presentation party!! Has anyone ever participated in a slide presentation party?*
3	**Say:** *During COVID, these parties became a popular way for people to meet with each other remotely. They were called PowerPoint Parties. At these parties, each person presents a topic that they want to share with their friends. We are going to party around the action plans you wrote for your Gaming in the Future practice booklet.*
4	Distribute **Slide Suggestions for Students**. Review the directions.
5	Explain the procedures you determined in Preparation (slide presentation software, teams make their own presentations vs sharing the slides with you, etc.).
6	Announce how long the preparation time period will be, when the party will be held, and any details for the party you determined in Preparation.
7	Provide work time.

Standards Addressed
Speaking & Listening
1, 2, 4, 5, 6
Reading & Literacy
1, 2, 4, 7
Writing
1, 2, 4, 5, 6, 7, 10
Language & Vocabulary
2, 3

Closure

1. Party time! The big day has arrived.
2. Begin the party by showing the three slides you created.
3. Each team will then present their slides or presentations. (Encourage applause at the end!)
4. After all the presentations, lead the group in a discussion about what they've learned about writing action plans.
5. **Ask:** "Are you ready for the Qualifying Problem competition?"
6. Entertain student responses.

Name _____

Slide Suggestions for Coaches

Title slide

Welcome to the Action Plan Development Presentation Party!

Second set of slides

An overview of the action plan format that outlines the key elements. Suggestions:

Action Plan Overview
Stage One - Discussion of criteria
- How you used the criteria to select this one best solution

Stage Two - Completeness and Clarity
- How your action plan will be implemented, including:
  - who, what, when, where, and how
  - sources of assistance and resistance
  - a timeline for implementation

Stage Three - Relationship to the underlying problem
- How the plan addresses the key verb phrase and supports the purpose

Stage Four - Impact on the future scene
- How the action plan makes a positive impact on the future scene

Stage Five - Humaneness
- The positive/productive outcomes of your plan

Stage Six - Fundamental concepts
- Evidence of research applied, creative strength, and futuristic thinking in your plan.

Third set of slides

An overview of the evaluation criteria. Suggestions:

Step 6 Evaluation Criteria
1. Discussion of criteria (2-10 points)
2. Completeness (2-20 points)
3. Clarity (2-10 points)
4. Relationship to the underlying problem (2-10 points)
5. Impact on the future scene (2-10 points)
6. Humaneness (2-10 points)
7. Fundamental concepts (1-5 points each)
   - Research Applied
   - Creative Strength
   - Futuristic Thinking

Last slide

Introduce the team slide presentations

Name _____

Slide Suggestions for Students

Directions

1. Work with your team to develop a slide presentation about the action plan you wrote in your practice booklet.
2. Make your presentation interesting and compelling as you convince the audience your plan is awesome! Show off your creativity!
3. Base your presentation on what you wrote for **Step 6 - Launching Your Action Plan** – **Activity** from your **Gaming in the Future** practice booklet. You may adjust as needed.
4. Refer to the outline for an action plan on the **Step 6 - Launching Your Action Plan Review** handout from **Gaming in the Future**, as needed.
5. Use the following as a guideline for your slides. You may make variations!

Slide 1 Write your underlying problem and a brief statement of your best solution.

Slide 2 Action plan paragraph 1: Discussion of criteria

Slide 3 Plan elaboration

Slide 4 Relationship to the underlying problem and impact on the future scene.

Slide 5 Humaneness

Slide 6 (optional): Fundamental concepts

Point out where the concepts of research applied, creative strength, and futuristic thinking appear in your plan.

Slide 7 (optional): Include anything else about your action plan!

Name _____

Exploring the World of Video Games

R

Directions

1. Choose a project from the **Video Game Choice Board** to share an important area of your research.
2. Develop ideas for your project.
3. Gather needed materials and CREATE!

Exploring the World of Video Games

Choose one of the options below to creatively share your research.

Milestones in video games

Research: Explore the history of video games. Create a timeline highlighting major milestones and their impact on today's video game culture worldwide.

Video game analysis

Select a popular video game and conduct an investigation. Analyze and evaluate its educational potential. What lessons or skills can it teach players? Create a news segment report on your findings and record it.

A player's perspective

Do you play video games? What is your favorite? Create an Elevator Pitch to convince others to play. Include the title, plot, gameplay features, and target audience. Be persuasive. Why should they join the fun? Will they meet new gamers? What will they learn by playing?

Opposing viewpoints

Debate: Research the argument for or against:

1. Using video games in education.
2. Using AI vs artists, musicians, and writers to develop new video games.

Write or present your stance with supporting evidence.

FREE CHOICE

Propose your own activity related to video games and get approval from your coach.

*picture

Solving global issues

Collaborate with a partner or two and brainstorm ways that video games could be used to help solve a global issue like climate change or education inequality. Select a global issue and problem-solve. Present your ideas in a visual format.

It's about time

Create a Video Game Journal.
Record the time you spend playing your favorite games each day. Is it excessive? Over three hours a day labels you as having a Video Game Addiction. Note what skills you learn from playing your favorite games.

Character creator

The gaming industry employs a variety of professionals, such as artists, actors, animators, coders, musicians, and more.

Create a character for a new video game. A video company has hired you to bring the character to life. Take on one of the professional roles and create a product.

Word quest

Create a vocabulary game.
Note the important words you identified as you research Video Games. Develop a creative vocabulary game to help your team members integrate vocabulary into their challenges, solutions, and action plans.

Name _____

Exploring the World of Video Games Rubric

Criteria	Needs More Play Time	Leveling Up	Achievement Unlocked	Level Completed!
	1	2	3	4
Understanding of Video Games Research	The research is limited and unclear	Displays a basic understanding	Demonstrates a solid understanding	Displays an exceptional understanding of the research
Creativity and Engagement	The project needs more creativity and originality in its presentation.	The project demonstrated limited creativity.	The project is creative and engaging.	The project is innovative and demonstrates exceptional creativity.
Presentation and Communication	The project could be more organized, and the research findings could be more precise.	The research presented is clear and organized but needs more thoroughness.	The project is well organized, and the research findings presented are clear.	The project is well organized and effectively communicates the research findings.
Effort and Enthusiasm	Effort and enthusiasm are minimal.	Participation does not reflect a commitment to the chosen activity and the integration of research.	The project demonstrates a commitment to research and developing a creative project.	The project demonstrates exceptional effort and commitment to researching the topic.
Add Up Points	_____ X 1 = _____	_____ X 2 = _____	_____ X 3 = _____	_____ X 4 = _____

Total Points: _____

What did you like best about your Choice Board project?

Is there anything that you would change or improve in the process or product?

Identify an audience who would enjoy seeing your product. Ask them for feedback.

Practice Future Scene

Video Games – **Preparing for the Competition** *(Topic Activity Unit)*

May 27, 2047, dawned with anticipation as the 5th NeoCircuit Esports League (NCEL) competitive season began. Across the United States, dozens of holo-integrated virtual reality championship arenas opened their doors as teams and fans arrived for the season's first matches. Since the beginning of esports in the 1970s, competitions matching physical ability with skill at video games have only grown in popularity, and now, it seems it is more popular than ever.

Under its motto, "Beyond Limits/Beyond Worlds," NCEL's mission is to provide a fair, cutting-edge, competitive environment while promoting environmental sustainability, player health, and technological innovation. Of course, NCEL also expects to make a profit for all the league's stakeholders, such as league leadership, team owners, coaching staff, and players.

Whether swinging swords in a futuristic medieval jousting tournament or scoring a goal in Ultimate Augmented Reality Frisbee, NCEL's esports provide dramatic, action-packed experiences for both players and audiences alike. Fans watching the events in person activate special neural implants to see the virtual reality settings and experience game play along with the competitors. The only things these fans can't do is communicate with players and make moves for them! Tickets for in-person games have a high price tag so many fans choose to stream the games at home or watch on big screens in sports restaurants, without the neural implant.

To prepare for each season, players follow a rigorous training schedule that includes physical conditioning and training for mental response and reflexes. Each player's training program is personalized using biometric and gameplay data, with changes made via AI to increase or decrease the intensity and length of training. Some medical personnel, however, have expressed concern that the long-term effects of this training program are unknown, with some critics even questioning whether AI has the ability to make changes to training that are the safest for players.

NCEL tournaments occur every weekend across the country, with gaming contracts and sponsorships signed months in advance. Between events, fans follow their favorite players' every move on popular social networks like VirtuaLink, getting hyped for the next tournament. New fan groups sprout up regularly. Most discussions are friendly, even when some fans point out the lack of gender and ethnic representation on some teams. However, the riot that followed a 2046 match in Miami, Florida, and then went viral, has sparked concern about the mental, emotional, and physical safety of fans.

Parameters

Time:

Place:

Topic:

WARNING:
This is not the official future scene. DO NOT USE this future scene for your Qualifying Problem Video Game submission.

Page 1 of 2 ⟶

Practice Future Scene

Video Games – **Preparing for the Competition** *(Topic Activity Unit)*

While the NCEL grows and thrives, there are ongoing concerns about the future of traditional sports. Audiences at national football, basketball, soccer, and hockey league games have been declining for years, and a fierce debate is raging about whether to disband the leagues altogether. Many wonder what impact this might have on the youth to high school to college sports progression. Young people find excitement and friendship in live youth sports, and parents appreciate the exercise and training their children are receiving – physical, mental, and social. Will parents even be able to afford for their children to participate in esports, especially if it is not offered in schools?

Some believe traditional sports are outdated and lack esports' fast-paced, thrilling nature. Others see things differently and point out that opportunities for physical fitness, teamwork, and the excitement for players and fans not connected to technology at live, in-person games could be lost in the process.

As the esports teams suit up and log on for another season, the growth of the NCEL presents a wealth of opportunities in esports. Yet, many concerns about its future remain. Identify a key issue of concern related to the NCEL and video game Esports and formulate an action plan.

WARNING:
This is not the official future scene. DO NOT USE this future scene for your Qualifying Problem Video Game submission.

FUTURE Problem Solving LESSON PLAN

A Pinball Game Reflection

M

Objectives

- Students will reflect on their growth as a result of participating in the Video Games unit

Standards Addressed
Speaking & Listening
1, 2, 6
Writing
2, 4
Language & Vocabulary
3

Materials

- **A Pinball Game Reflection,** 1 per student, cut into separate cards for each question (page 90)
- A song to play during the three rounds of pinball
- Video Game Clip (Show only the beginning; stop at approximate time 1:28)

Preparation

1. Select a song to play during the three rounds of pinball.
2. Cut the cards. Form stacks for each question so you can easily distribute them by question.
3. Preview Procedure #7 and #8. Plan any ground rules you think are necessary for throwing the pinballs in the game.

Procedure

1	Begin the lesson by showing the video clip of a past pinball game. Ask the students what they notice about the pinballs.
2	Present the following historical background of pinball games as they relate to setting the groundwork for the video game revolution. Pinball games originated in the late 19th century as mechanical tabletop games. They evolved in the 1930s with the addition of coin operation and electrified bumpers, making them more interactive and engaging. They introduced concepts like high scores, player control, and immersive design, paving the way for video games to build upon these mechanics in digital form. By the mid-20th century, pinball machines had established the foundation for the arcade culture, inspiring the development of electronic gaming systems and shaping the interactive entertainment industry.
3	**Say:** *The goal of this lesson is to reflect on what you have learned in our Video Games unit through the simulation of a pinball game – the early version of video games! The reflection forms I will be distributing will represent the pinballs.*
4	**Say**: *Think about our unit and your learning experiences. For each round, I will distribute a card. I will play some music and you will write your answer to the question, a reflection about our Video Games unit. Then, the real fun begins: You will crumple your pinball reflection and send it flying around the room. Pick up someone else's pinball and send it flying. Continue doing this until the music stops. Then you will each pick up the pinball nearest you and read it to yourself. I will ask for volunteers to respond or reflect on what is written on the pinball. Then it will be time for the next round. There will be three rounds of play. Are there any questions as to how this game is going to be played?*

FUTURE Problem Solving
LESSON PLAN

A Pinball Game Reflection

M

Procedure, continued

5	Allow students to ask and get answers. If you have set ground rules, announce them now.
6	Distribute **Reflection Question 1** to each student.
7	Start the music.
8	**Say:** *Write your response and let the game begin!*
9	You can stop the music when you think it's appropriate.
10	**Say:** *Grab a pinball (crumpled paper) and read the reflection. Would anyone like to offer a response or a reflection on the reflection?*
11	Allow time for responses.
12	Distribute **Reflection Question 2.** Follow Procedures #9, #10, and #11 through the next two rounds.

Standards Addressed
Speaking & Listening
1, 2, 6
Reading & Literacy
2, 4
Writing
3
Language & Vocabulary

Closure

Congratulate the students on their work on this unit and encourage them to do their best on their Qualifying Problem booklet.

Name _____

A Pinball Game Reflection

Reflection Question One

What was the most important thing you learned in this unit?

Your response:

Reflection Question Two

What was the most challenging part of this unit, and how did you overcome the challenge?

Your response:

Reflection Question Three

What else did you learn while working on this unit?

Your response:

Additional curricular resources

We hope you find this edition of our activity unit series to be a valuable resource as your students gather knowledge about Future Problem Solving topics of study.

Video Games Research Unit

Our research unit on this topic contains a wealth of curricular resources for use with students in a variety of settings, including out-of-school time. The topic research overview identifies major themes and concepts while the resources section includes vocabulary, discussion topics, learning prompts, and assessments. Also, our curated list of suggested readings and digital resources for the topic contains helpful summaries.

Global Issues Champions Series

This series showcases student written work for the 2024 Global Issues world champion team and individual competitors by division. Their full evaluations are included. To use this publication as a coaching tool, first review the Air Quality future scene with your students. Then ask students to complete a booklet using the future scene. You can do this as a mock competition or step by step as practice. For students looking to deepen their understanding of evaluations, we recommend that you give each team a copy of the student work, step by step. Ask students to identify strengths and weaknesses in the sample work based on their understanding of the scoring rubric. Review the evaluation concepts identified in each step and look at the scores and feedback from evaluators together.

Education Standards

Our Future Problem Solving process fulfills a wide variety of education standards. We take connecting with these standards into account when developing our program materials. Teachers can easily tailor Future Problem Solving content to meet their specific education system and local requirements as needed.

How our topics are selected

Our topics represent important challenges from business, civics, society, science, and technology and serve as the thematic basis for given problem solving situations. Each school year, students get 3-5 opportunities to solve important near-future global issues based on their progress in local and regional competitions. To be considered, a topic must be broad enough to appeal to participants living around the globe, offer a range of themes and issues to explore, and be considerate of a variety of views. Lastly, of course, every topic must be accessible for all, from ages 8 to adult.

We welcome submissions of topic ideas from anyone year round. Our topics committee reviews, refines, and categorizes submissions into our diverse strands. Then options are narrowed down and screened by our regional affiliate leaders. They pre-select top candidates for each of the category strands to present to our entire global community for a vote. The community's input, including students, heavily influences the final selection. We announce topics for the upcoming competition season March 1.

About Future Problem Solving

Future Problem Solving proudly celebrates over 50 years of placing more than a million young people at the core of a dynamic, purposeful learning experience. Each year K-12 students around the world participate in a variety of challenges designed to empower curious youth to become changemakers. Problem solvers learn how to think, not what to think, and gain skills they need to succeed in work and life. Our programs help young people develop their own voices and the confidence to use them.

To learn more about Future Problem Solving, to submit a topic idea, or contact us, visit fpspi.org.