



Teacher Guide

F/G Start Up, Lesson 4: The Problem-Solving Plan

Level F/G Unit 1 Cycle 1 Lesson 4: The Problem-Solving Plan

teacher reference

Lesson Objective: Students will use the Problem-Solving Plan and learn more daily cooperative learning routines.

By the end of this lesson, students will know the steps of the Problem-Solving Plan and use them to analyze and persevere in solving problems. They will also learn the homework check routine, follow Team Mastery routines, and begin using the Random Reporter rubric to evaluate their own solutions and explanations.

Vocabulary: situation, mathematical data

Materials: none

During Teamwork, circulate and ask questions like the following:
Tell me what's going on in this problem.
What are the parts? What is the question you have to answer?
What is your plan to solve it?
Does your solution make sense? Explain.

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Teacher Reference

Beginning today, you will introduce some problem-solving skills in this cycle that will develop your students' critical thinking skills and be useful to them throughout the curriculum.

Warm-Up

get the goof

th Georgia is adding fractions. She says $3\frac{3}{5} + \frac{2}{3} = 3\frac{5}{8}$.

What's wrong with her thinking?

Random Reporter Rubric

- correct numeric answer
- stated as a complete sentence that identifies the question
- clear, possible explanation of the thinking behind the solution

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Introduce the Random Reporter Rubric

After teams have two minutes to work on this problem, explain that, from this point forward, every Random Reporter event will have two parts.

- The Random Reporter on each team will show their team's answer on the team's dry erase board. Each team with a correct answer will get a point.
- One or more teams will be chosen, and that Random Reporter will explain their team's answer. That team will get one additional point if the full rubric is satisfied.

Note that the rubric is on each team folder for easy reference.

Warm-Up

homework

- 1 Discussion Starter:**
Lead your teammates in comparing homework answers.
- 2 Each Team Member:**
Complete the homework survey.
- 3 Go-Getter:**
Paper clip your team's homework papers and turn them in.
- 4 Recorder:**
Fill in today's homework information on the Team Score Sheet.


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Introduce the Homework Check Routine

This routine should take no more than two minutes. Teams are not re-working problems here, simply noting if everyone's answers are the same. The Recorder marks a check on the team score sheet for each student that completed the homework, and fills in the star if the whole team has completed homework.

Explain that teams can earn more bonus points if team members bring in evidence of completing extra math work like assigned worksheets, tutoring sessions, or Khan Academy exercises.

Level F/G Unit 1 Cycle 1 Lesson 4: The Problem-Solving Plan



Today you will learn and use a five-step problem-solving process to solve problems.

Rajeesh spent 10 minutes taking a shower, 5 minutes getting dressed, and 15 minutes eating breakfast. How much time did it take Rajeesh to get ready for school?


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Target

This is a brief look at where students are heading in this lesson.

Active Instruction



I'm making a spaghetti dinner for 8 people. Each needs 8 oz of spaghetti sauce. 28-oz jars of spaghetti sauce are on sale. How many 28-oz jars will I need?


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Active Instruction: Model the Problem-Solving Process

Click the demo icons as you model following the steps to make sense of the problem, locate the parts, make a plan, solve, and then check your answer. Finally, click the Think-Pair-Share icon and have pairs discuss the question.

Teamwork



1) The park has 8 volleyball nets. Two teams can play on each net. Each team can have as many as 6 players. How many teams can play volleyball at the park at one time?

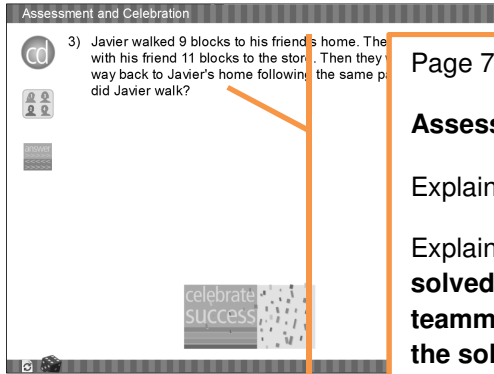
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Teamwork: Introduce Team Mastery

Note to the students that from now on, the Teamwork part of the lesson will include a problem the whole team works on together (Team Huddle), and then more problems that students work on individually (Team Mastery). All of the Teamwork problems appear on the Teamwork sheet in the team folder.

Explain: **For Team Mastery, work by yourself to answer each question. Then check in with a partner and compare your answers. If you both have the same answers, you can assume your answers are correct. If your answers are different, check the answer key, and try to figure out where the mistake is. When everyone is finished, come to an agreement on each answer as a team, and practice explaining your answers so you can be prepared for Random Reporter.**



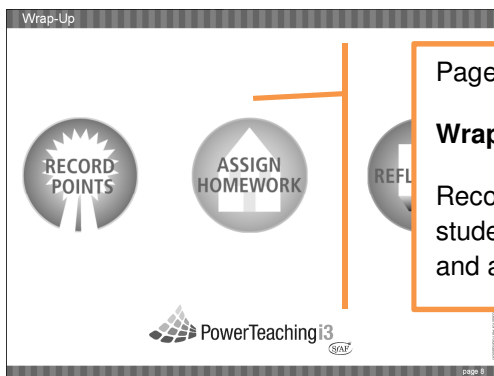
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Assessment: Introduce Class Debriefing and Celebration

Explain that every Teamwork session will end with a Class Debriefing.

Explain: This is question number 3 from Team Mastery. You've already solved this problem on your own, and then compared answers with a teammate. Your whole team had an opportunity to practice explaining the solution. Class Debriefing is where Random Reporters show how well their team prepared them on this material.

Use Random Reporter to assess how teams fared, award points for correct answers and according to the rubric, and use cheers to celebrate success.



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Wrap-Up

Record earned team celebration points on the poster, have student look in the team folder for their homework assignment, and ask teams to do a brief reflection on today's lesson.