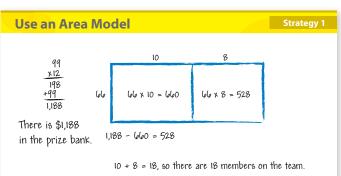## Spark Your Learning • Student Samples

During the *Spark Your Learning,* listen and watch for strategies students use. See samples of student work on this page.

Use an Area Model — Strategy 1

$$\begin{array}{r} 99 \\ \times 12 \\ \hline 198 \\ +99 \\ \hline 1,188 \end{array}$$

	10	8
66	66 × 10 = 660	66 × 8 = 528

There is $1,188 in the prize bank.

1,188 − 660 = 528

10 + 8 = 18, so there are 18 members on the team.

If students . . . correctly multiply and divide using an area model, then these students are demonstrating exemplary understanding of the concepts learned in previous lessons.

Have these students . . . share and explain how to use an area model to solve the problem. **Ask:**

Q How does your area model show the solution to the problem?

Use Repeated Subtraction to Divide — Strategy 2

$$\begin{array}{r} 99 \\ \times 12 \\ \hline 198 \\ +99 \\ \hline 1,188 \end{array}$$

There is $1,188 in the prize bank. I subtract $66 from $1,188 repeatedly until I get zero. I subtracted $66 eighteen times, so there must be 18 members on the team.

If students . . . use repeated subtraction to determine the number of team members, then these students show an understanding of one way to solve the problem but do not demonstrate whether they recognize that they can divide to solve the problem.

Activate prior knowledge . . . by having students consider the relationship between repeated subtraction and division. **Ask:**

Q What operation is related to subtracting repeatedly?

Q What division expression can you write to model the number of team members?

COMMON ERROR: Divide Incorrectly

$$\begin{array}{r} 99 \\ \times 12 \\ \hline 198 \\ +99 \\ \hline 1,188 \end{array}$$

153 team members

$$\begin{array}{r} 153 \\ 66\overline{)1,188} \\ -66 \\ \hline 528 \\ -330 \\ \hline 198 \\ -198 \\ \hline 0 \end{array}$$

If students . . . are unable to correctly divide to find the number of team members, then these students may need to consider other methods they have used to divide by 1-digit numbers.

Then intervene . . . by reminding students how they have divided in previous lessons. **Ask:**

Q What methods do you know to divide a 4-digit number by a 1-digit number?

Q How can you apply these methods if the divisor is a 2-digit number?

Use Partial Quotients

I Can use partial quotients to divide a multi-digit number by a 2-digit divisor.

Name _____

Spark Your Learning

Team Mud Footers is participating in an obstacle course marathon. For each obstacle the team completes, $99 is added to their prize bank. The team completes 12 obstacles. If each member takes home $66, how many members are on the team?

Possible student work:

$12 \times \$99 = \blacksquare$

$10 \times 99 = 990 \qquad 2 \times 99 = 198$

$990 + 198 = 1,188$

$\blacksquare \times \$66 = \$1,188$

$\$1,188 \div 66 = 18$

	10	8
66	660	528

There are __18__ members on the team.

Turn and Talk Why would there not be a remainder for a division problem modeling the context of this situation? *See possible answer at the right.*

Module 2 • Lesson 4

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SUPPORT SENSE-MAKING • Three Reads

Tell students to read the problem stem three times and prompt them with a different question each time.

1. What is the situation about?
   Possible answer: an obstacle course marathon

2. What are the quantities in the situation?
   $99, $66, 12 obstacles

3. What are possible mathematical questions that you could ask for the situation?
   Possible questions: How much does the team earn? How many members are on the team?

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① Spark Your Learning

▶ MOTIVATE

Introduce the problem. **Ask students:** What kinds of races have you watched or participated in? Tell students to discuss in a small group. Have them talk about what kinds of numbers are involved in a race and what these numbers represent.

SUPPORT SENSE-MAKING Three Reads
Have students read the problem three times. Use the questions in the Three Reads box below for a different focus each time.

▶ PERSEVERE

If students need support, guide them by asking:

Q Assessing What operations can you use to determine the answer from the given information? Possible answer: multiplication and division

Q Advancing • Use Tools Which tool could you use to solve the problem? Why is this tool more strategic? Students' choices of strategies or tools will vary.

Q Advancing What is the first step that needs to be done in order to solve the problem? Possible answer: Find the total amount of money that Team Mud Footers earns during the marathon by multiplying the number of completed obstacles by the amount gained for each obstacle.

Q Advancing How can you use division to solve the problem? Find the number of team members by dividing the total amount of money earned by the amount each team member takes home.

Turn and Talk Have students discuss contexts that involve remainders. Have them consider and discuss what a remainder would represent in the problem. Possible answer: A remainder would represent a fraction of a team member, which would not make sense.

▶ BUILD SHARED UNDERSTANDING

Select students who have used various strategies and tools to share with the class how they solved the problem. Have students discuss why they chose a specific strategy or tool.

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