Mathematics: The Language of STEM
Make a Story
Marlene Byers

CONTENT AND TASK DECISIONS

Grade Level(s): first

Description of the Task: Students will first create a math fact family by rolling a dice twice and record their information on worksheet 1. (ex. If students roll a 5 and 4 they may create: 5+4=9 4+5=9 9-5=4 9-4=5) Then they will choose one the facts to model on worksheet 2. They will decide what to count, how to display their thinking for addition or subtraction.

Indiana Mathematics Content Standards: 1.CA.3: Create a real-world problem to represent a given equation involving addition and subtraction within 20.

Indiana Mathematics Process Standards: PS.2: Reason abstractly and quantitatively. Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

Mathematics Content Goals: Students will use their knowledge of number fact families to create a story.

Language Objectives: Students will be able to explain their math story and the process they used to create it.

Materials:

- Worksheet 1 and 2
- Counting manipulatives can be laid out and available for students who want to use them
- 1 dice

THE LESSON

Before: Students will need to have already used number fact families before attempting this lesson.

- **Activate prior knowledge** Review number fact families created with three numbers Ask *"What fact family can I create with the numbers 5, 2, 3?"*
- **Be sure the problem is understood:** Roll the dice and demonstrate how to create a fact family and then a story to go with it.
- **Establish clear expectations:** Students record their possible fact families on worksheet 1. Then show a story on worksheet 2. They will have an equation, a picture, and a sentence answer.

During: Students will work with a partner create number fact families, choose one and then show that fact family on worksheet 2

- **Let go**: You may begin.
- **Listen actively:** Walk around and ask questions.
- **Provide appropriate support** *"Why did you chose this fact out the family?" "Tell me about your picture of your math story." "Who are the characters in your story?" "What is the problem in your story?" "What question are you asking the student who works your math story?" "What is your sentence answer to the question you asked?"*
- **Provide worthwhile extensions**: "What if you had two more added or taken away?" "What if you used another fact family?" Possibly set aside a time in the day or week when students can share a time when they used math or saw someone else use math.

After: Students find another partner group to share with.

- **Promote a mathematical community of learners** Around the room have one partner group be the "student" and the others be the "teacher". The "students" describe their work to the "teachers," and then change places.
- **Listen actively without evaluation** Listen in on the conversations. At the end take one good conversation and share it with the whole group.
- **Make connections** Ask *"Could this story happen in real life?" "Is it fantasy?" "Does the math work?"" How was math the tool we used here today?"*
- **Summarize main ideas** Say, *"Today we see math at work in real life. Look for math in your life."*

ASSESSMENT

Observe: The conversations you have students and what they share together will reveal if they understand how math us part of life.
Look for accurate: creation of

Ask: *"How might you use math at home, the store, the park, the birthday party?"*

Check for these things in the work: (if desired, give each part a value of 3 points)

- Accurate number family
- A story that represents the chosen number family
- An accurate picture/representation of the number family
- A clear explanation of the work that reveals understanding

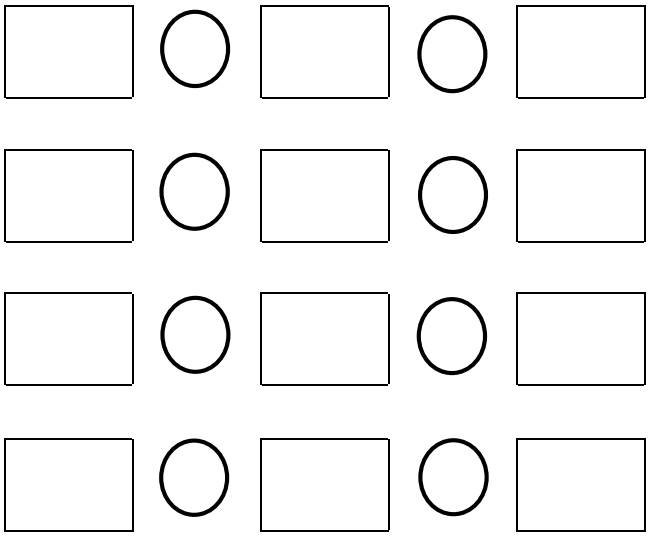
Create a Math Story

Names_____

1. Roll the dice two times.
2. Write down the numbers you rolled and a third number for a number family.

first roll	second roll	third number in the number family

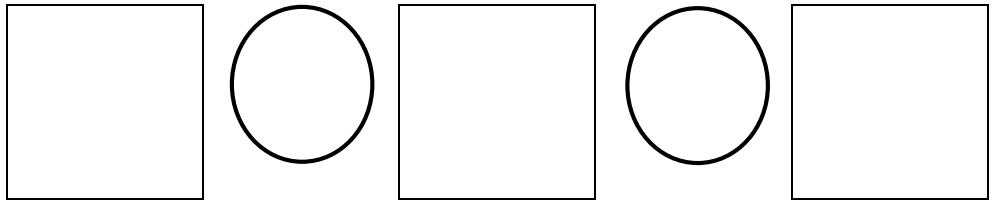
3. Think about the math equations you could write using these three numbers.



4. Now use one of your math equations in a math story and picture.

Create a Math Story

Names_____



Story_____

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