

(1.12) Underlying processes and mathematical tools. The student communicates about Grade 1 mathematics using informal language.

(1.12.a) Underlying processes and mathematical tools. The student communicates about Grade 1 mathematics using informal language. The student is expected to explain and record observations using objects, words, pictures, numbers, and technology.

Clarifying Activity with Assessment Connections

Students work in small groups to solve the problem, "How can we share this bag of M&Ms fairly among the members of our group?" Students state and discuss the problem in order to understand it, brainstorm ways to solve the problem, choose a strategy for solving the problem, carry out the plan to solve the problem, and discuss the result to determine if the candy was indeed shared fairly.

Students try different ways to solve the problem and select an appropriate strategy, such as guessing how many M&Ms each student will get, then sharing their results to check their guesses.

Assessment Connections

Questioning . . .

Open with . . .

- How can we solve the problem of M&Ms fairly among the members of our group?

Probe further with . . .

- How did you solve this problem?
- What did you think about doing to solve the problem? Why?
- What did you actually do to solve the problem?
- What other ways might you have tried to solve this?
- Why did you decide to use your strategy instead of something else?
- Is your solution reasonable? How do you know?
- In your mathematics journal, record how you figured out how to share the M&M's fairly.

Listen for . . .

- Can the student explain his or her strategy and thinking?
- Does the student talk about the reasonableness of her solution?

Look for . . .

- Can the student plan a viable solution to the problem?
- Can the student follow a plan that they develop to solve a problem?

- How reasonable and efficient is the strategy that the student plans to use?
- How does the student solve the problem? Does he or she draw a picture, look for a pattern, systematic guess and check, act it out or use another approach?
- Does the student solve the problem in more than one way?
- How does the student justify the reasonableness of the solution?
- What happens if the student's plan does not lead to the desired results? What does the student do? Does he or she give up? Does he or she have other strategies to fall back on if one plan is not yielding the desired results?
- Can the student explain and record observations using objects, words, pictures, numbers, and technology?

Future TEKS Connection

- Grade 2 TEKS Connection 2.13A

(1.12.b) Underlying processes and mathematical tools. The student communicates about Grade 1 mathematics using informal language. The student is expected to relate informal language to mathematical language and symbols.

Clarifying Activity with Assessment Connections

Students use words and symbols to write about daily mathematics lessons in "math journals." For example from TEKS 1.3A, Students use concrete objects with story mats to act out and solve oral addition and subtraction story problems created by the teacher or by the students. Students then use number and symbol cards to form addition or subtraction sentences, or write their own number sentences, to represent the stories that they have acted out on the story mats. Provide each student with a blue construction paper story mat, a small container of goldfish crackers, number cards, and symbol cards (+, -, =). Students solve the following problem: There were 6 fish in the ocean. A whale ate 3 of the fish.

Assessment Connections

Questioning . . .

Open with . . .

- How many fish are in the ocean now? Show me what happened using your goldfish crackers, number cards and symbol cards. Tell me what you did.

Probe further with . . .

- How many fish did you start with?
- What did you do next?
- How many fish were swimming at the end of the story?
- Record your story in your math journal using words, pictures, or numbers.
- Write a number sentence in your journal that describes the action in the story.

- Does your number sentence match what happened in the story?

Listen for . . .

- Does the student use of appropriate language to describe the story in order to model the action of addition or subtraction?

Look for . . .

- How does the student record the problem and solution in the journal?
- Does the student use appropriate representation of each quantity in story (both concrete objects and number sentence... $6 - 3 = 3$)?
- Does the student demonstrate conservation of quantity (do they have to count 1, 2, 3 or do they know it is 3)?

Future TEKS Connection

- Grade 2 TEKS Connection 2.13B