Activity 12

Rocket Math

Objective

Students find missing addends in simple number sentences.

Standards

Mathematics

Materials

- Paper plates, 1 for every two students
- 5 copies of the small rocket drawing (Figure 7, page 79), colored, cut out, and ready to attach to chalkboard or flannel board
- 1 large rocket drawing (Figure 6, page 78)
- Copies of small rocket drawing (Figure 7, page 79), 1 set of 5 rockets for every 2 students
- Chalkboard or flannel board
- 1 paper plate, ready to attach to chalkboard or flannel board
- Journal or a piece of paper, 1 per student
- Paper, 2 pieces per student
- Markers, pencils, or crayons
- Colored chalk

Educator Information

- Copy, color, and cut out 1 set of 5 small rockets.
- Prepare rockets and paper plate to attach to chalkboard or flannel board.
- Read the directions for the activity and be prepared to share information with students.
- Copy, color, and cut out small rockets, 1 set of 5 rockets for every 2 students. Laminate for future use.
- This activity may require two class periods.

Procedure

First Class Period:

1. Show the set of five small rockets to the class. Have the class count the number of rockets.
2. Attach the rockets to the chalkboard or the flannel board so that students can see them.
3. Show students the paper plate. Cover all the rockets with the plate. Attach the plate to the chalkboard or flannel board.
4. Take 2 rockets out from under the plate. Have the class count the rockets they can see.

5. Ask the students to figure out the number of rockets left under the plate. The answer is 3.

6. Remove the plate and confirm that the answer is correct. Ask the students how they determined the answer.

7. Tell students that they need to draw a picture or representation of what they see. Demonstrate how to draw the representation on the chalkboard. Draw a big circle to represent the plate. Use one chalk color to draw 3 small rockets or dots inside the circle. These represent the rockets hidden under the plate. Label with the appropriate numeral. Use another chalk color to draw two rockets or dots outside of the circle. These represent the rockets removed from under the plate. Label with the appropriate numeral. Write the numeral 5 to show the total number of rockets.

8. Hand out a journal or a sheet of paper to each student. Let them practice drawing the representation.

Figure 15. Sample Page From Journal

9. Repeat the activity several times changing the number of rockets removed from under the plate. Each time, have students draw a picture to represent what they see. To save paper, suggest that they draw two lines to divide the paper into four sections. See *Figure 15*.

Second Class Period:

1. Divide the class into groups of two students. Distribute one paper plate and five rockets to each pair. Hand out journals or one sheet of paper to each student.

2. Have students practice the activity independently taking turns placing and removing the rockets. Students take turns telling how many rockets are under the plate. Encourage them to tell how they figured out how many rockets were left under the plate. Repeat several times.

3. As the activity is repeated, have students draw a picture in their journal or on the paper to represent what they see. Remind them to label the picture with the appropriate numerals.

4. Have students share their pictures with the class. Look at the many different combinations of covered and uncovered rockets they found.

5. As students become familiar with the game, vary the total number of rockets used. Repeat the activity.

6. Depending on the ability level of the students, have them write simple addition and subtraction sentences. For example, students could write *1+4 = 5* or *5 – 1 = 4* to represent their drawings.
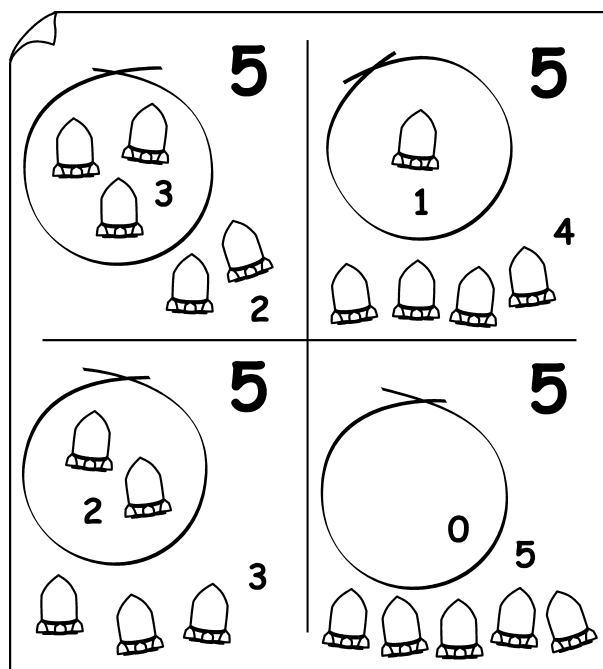
Assessment

- Observe students as they repeat this activity. Discuss and evaluate their drawings.

48

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Enrichment

- Allow students to practice finding the missing addend using a number line from 0 to 10. Place a number line on the floor. Introduce or review the concept of a number line. Color and cut out the large rocket (Figure 6, page 78). Laminate for future use. Students place the rocket at the start of the number line, ready to launch. Roll a die. Move the rocket the appropriate number of spaces on the number line. Continue to roll the die and move the rocket the appropriate number of spaces. Continue to roll until the rocket reaches 10. For example, the student rolls a 6 and moves the rocket to the 6. The student rolls a 1 and moves the rocket to the 7. Continue to roll the die until a 3 is rolled. If the numeral is greater than the number needed to reach 10, roll again. Move the rocket to the 10. When the rocket reaches 10, have students reverse the direction of the rocket. Roll the die until the rocket returns to 0. Help students develop ways to record the data. Encourage them to use the data in simple addition and subtraction sentences. If more appropriate, fold the number line in half, and have students roll a die to reach 5.

- On the playground, draw a line of 11 squares on the pavement with sidewalk chalk. Label each square with a numeral from 0 to 10. Demonstrate to students how to play a math version of hopscotch. The hopscotch squares become a number line. A student stands in the 0 square. Roll a die. The number on the die determines the number of squares that the student jumps. Students roll the die and jump the appropriate number of squares until they reach 10. If the numeral is greater than the number needed to reach 10, roll again. When the student reaches 10, turn around and repeat the activity to reach 0. Encourage students to use the data in simple addition and subtraction sentences.

- Have students practice counting using the rhymes and chants in *Activity 11*, page 44. Select appropriate books with rhymes and chants to encourage additional practice.
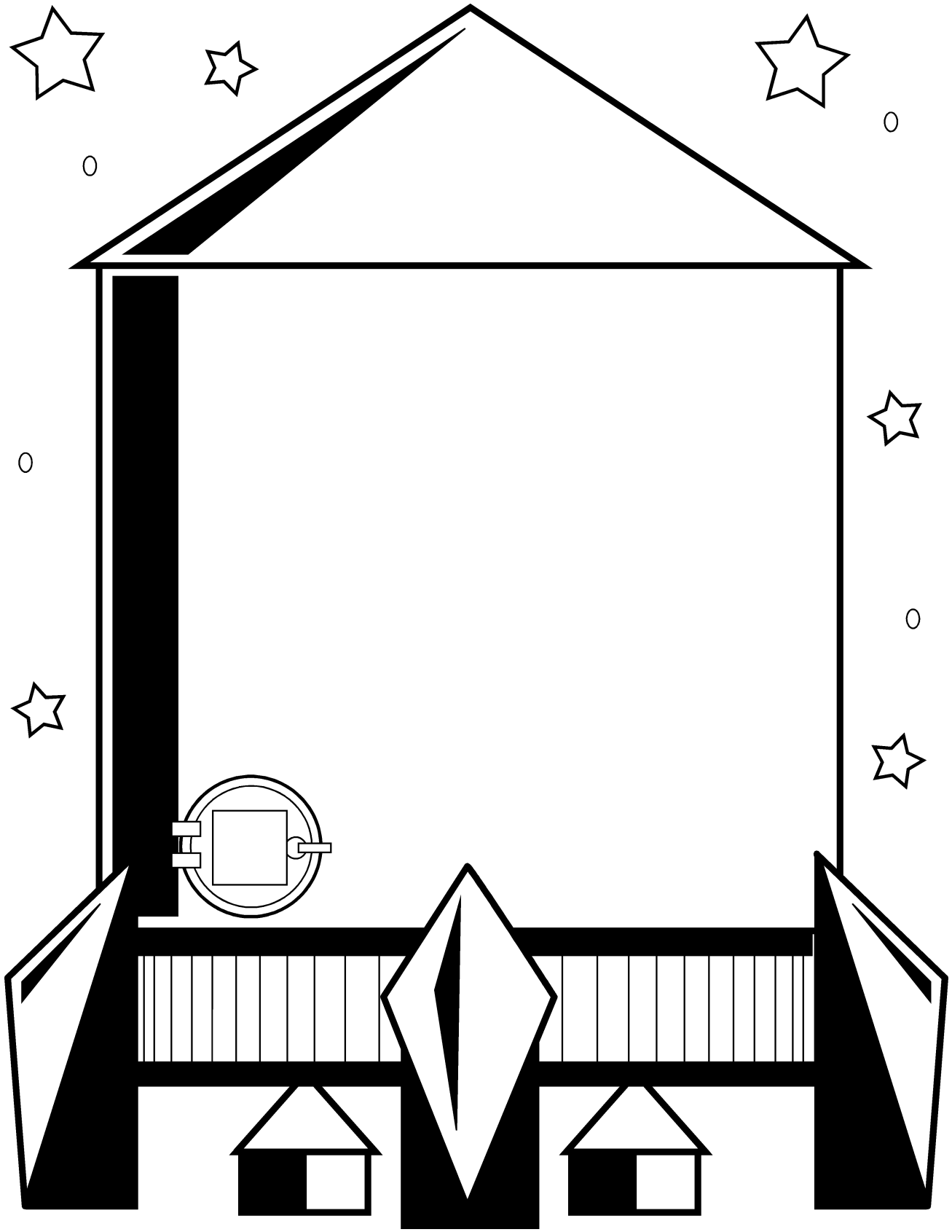
49

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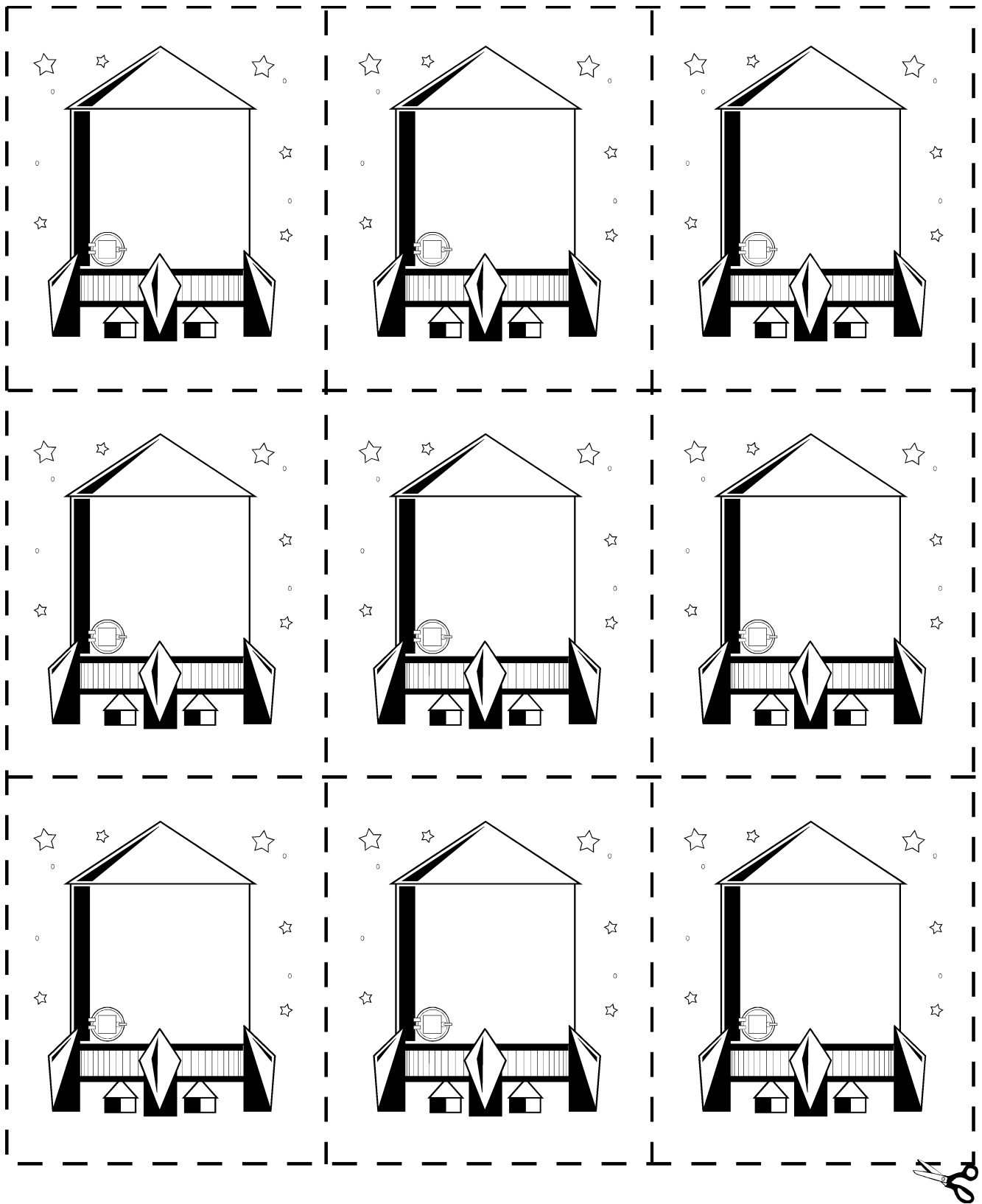
Figure 6. Large Rocket Drawing

Figure 7. Small Rocket Drawings