The Space Party

A book about multiplication (equal groups)

Aim

In *The Space Party* the equal groups model is used to develop the concept of multiplication and a range of language.

These whole-class activities provide students with the opportunity to:

- listen to a story about equal groups of different size
- describe equal groups using their own language
- form equal groups to match a descriptor
- use words and then symbols to write number sentences
- use the *Teaching Tool* to solve problems

Activities

1. Listening to the story
2. Using materials to act out the story
3. Using the teaching tool to act out the story
4. Using the teaching tool and number cubes to make equal groups
5. Using cubes and number name cards to form number sentences
6. Writing sentences to match concrete representation
7. Using the teaching tool to solve problems
8. Introducing symbols
9. Using the teaching tool to write number sentences

1. Listening to the story

Resources
• *The Space Party*

Activity
Show the cover of *The Space Party* to the students and read the title aloud. Encourage volunteers to predict what they think the story might be about. Slowly read the story and discuss each double-page spread. Then ask, **What happened in the story? What did you see in the pictures?** Encourage students to explain that the spaceships were in groups. Read the story again. Discuss each of the picture spreads and identify the number of groups. Ask, **What is the same for each group?** (The number of spaceships.) Invite individuals to describe how the spaceships are grouped. Encourage them to use expressions such as "groups of" to describe the arrangement.

2. Using materials to act out the story

Resources
• *The Space Party*
• Connecting cubes
• Resealable plastic bags

Preparation
Each group of students will need connecting cubes and some snap-lock bags.

Activity
Read *The Space Party*. For each double-page spread, have the groups of the students model the story by placing connecting cubes in their bags to match the equal groups of spaceships depicted. Discuss the bags of cubes and ask a student from each group to summarise the findings by saying for example, '2 groups of 7 is equal to 14'.
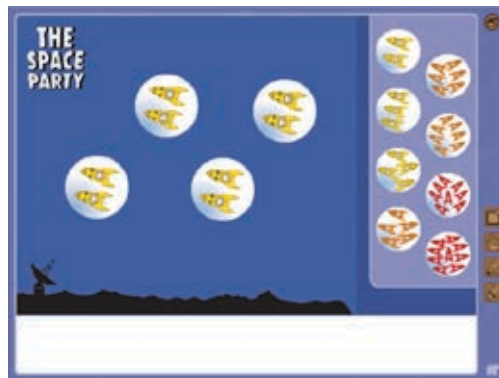
3. Using the teaching tool to act out the story

Resources
- *Teaching Tool*
- *The Space Party*

Activity

Ensure that all the students can see the *Teaching Tool*. Read pages 4–5 of *The Space Party*. Ask a student to recreate the groups on the *Teaching Tool*. For this scenario, the student would drag four groups of two spaceships into the work area. Then ask, **How many groups are there? How many spaceships are in each group? What is the total? How do you know?** Repeat for each double-page spread in the big book.

4. Using number cubes and the teaching tool to make equal groups

Resources
- *Teaching Tool*
- Blank cubes

Preparation

The blank cubes need to be different colours. Label both blank cubes: 1, 2, 3, 4, 5, <u>6</u>.

Activity

Ensure that all the students can see the *Teaching Tool*. Show the two labelled cubes and tell the students that one colour (yellow) represents the number of groups and the other colour (green) represents the number in each group. Select a volunteer to roll the cubes. Next, select a volunteer to move the groups into the work area on the *Teaching Tool*. For example, if 3 was rolled on the yellow cube and 6 was rolled on the green cube, the student would move 3 groups of 6 spaceships. Use the writing tool to write *3 groups of 6 is equal to _____* in the white panel at the base of the screen. Ask, **What is the total? How do you know?** Have a student write the answer on the *Teaching Tool*. Repeat for other rolls of the cubes.

## 5. Using cubes and word cards to form number sentences

Resources
- *The Number Case* Year 1
- Blank cards
- Large permanent marker
- Connecting cubes

Preparation
Select the numeral cards for 2 to 9 from *The Number Case*.

Activity
Work with the students to brainstorm some different expressions that could be used in place of "groups of", for example stacks of, bunches of, bags of, boxes of, bowls of, jars of, and so on. As appropriate expressions are suggested, write each on a blank card. Show the students the numeral cards. Invite a volunteer select any two numeral cards and one expression card and attach them to the board as shown below.
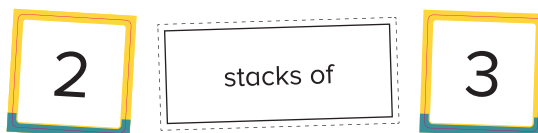
Have the students work in pairs to represent the multiplication sentence with cubes. Discuss as a class asking questions such as, **How many stacks are there? How many cubes in each stack? What is the total? How do you know?** Repeat as time allows.

6. Writing sentences to match concrete representations

Resources
- Connecting cubes
- Resealable plastic bags

Preparation
Each group of students will need 30 connecting cubes and nine snap-lock bags.

Activity
Write _____ *groups of* _____ *is equal to* _____ on the board. Challenge the students to use their cubes and bags to create different equal groups that can be used to complete the sentence. For example, some students may make 3 bags with 2 cubes in each bag. When they have finished making their groups, have them copy and complete a matching sentence. Allow time for each group to record five different sentences. Then ask a student from each group to present and describe one of their completed sentences to the class.

7. Using the teaching tool to solve problems

Resources
- *Teaching Tool*
- Connecting cubes
- Resealable plastic bags

Preparation
Each group of students will need approximately 30 connecting cubes and nine snap-lock bags.

Activity
Ensure that all the students can see the *Teaching Tool*. Use the writing tool to write ___ *groups of* ___ *is equal to 12* in the white panel at the base of the screen. Say, **We are going to show a total of 12 spaceships.** Challenge the students to use their cubes and bags to figure out the number of groups and the number in each group. Next, invite different students in turn to use the *Teaching Tool* to show their solutions. After the first solution, ask, **Is there more than one solution? Did anybody have a different number of equal sized groups?** Repeat for other totals such as 16 and 18.

8. Introducing symbols

Resources
- *The Space Party*

Activity
Read pages 4–5 of *The Space Party* again and show students the illustration. Select one student to write the multiplication sentence *4 groups of 2 is 8* on the board. Discuss the sentence and encourage students to see that 4 groups of 2 is just a shorter way of writing $2 + 2 + 2 + 2$. Next, draw a line below the words "groups of" and ask, **Does anyone know an even shorter way of writing the number sentence?** At the end of the discussion, introduce the multiplication symbol. Erase "groups of" and write the symbol in its place. Say, **This symbol is a shorter way of writing "groups of" and an even shorter way of writing $2 + 2 + 2 + 2$.** For the remaining pages of the story, have the students write all three forms of the number sentence, $4 + 4 + 4 + 4 + 4 = 20$, 5 groups of 4 is 20, and $5 \times 4 = 20$.

9. Using the teaching tool to write number sentences

Resources

- *Teaching Tool*

Activity

Ensure that all the students can see the *Teaching Tool*. Invite a volunteer to drag groups of spaceships onto the work area, for example 3 groups of 3 spaceships. Ask the remaining students to each write the matching multiplication sentence and the number sentence, for example, 3 groups of 3 is 9 and $3 \times 3 = 9$. Ask, **What is the total? How do you know?** As a student gives the correct answer, ask them to create the next scenario for the class. Extend the activity by writing a multiplication number fact such as *$4 \times 6 =$ _____* in the white panel at the base of the screen. Have students model the problem on the *Teaching Tool* and write the answer.