

Makes unequal groups and is unable to compare the groups

Opportunity for: reasoning about numbers

Resources

- Different coloured cubes
- Number cards (Resource sheets 1 and 2)
- Three sizes of paper with smiley faces or stick people drawn on them in three different sizes (it can help to have sad faces to show unfair sharing)

Key vocabulary

| | |
|--------------|-------------|
| equal groups | fewer |
| more | same number |
| less | too many |

Teaching activity

Time 10–15 minutes

Explain to the child that today they are going to pretend to go on a picnic and that the different coloured cubes are different kinds of food, for example, blue cubes are blueberry muffins. The activity today will help them to make equal groups.

? What do you think it means to make equal groups with these cubes?

Talk through with the child what they do with the cubes. Encourage them to make groups larger than two cubes.

If the child struggles with sharing, teach 'one for you, one for me'.

? How many have you got? How many have I got? Is it fair?

Explain that they are going to pretend that the white and brown cubes are sandwiches, and they are going to share them out to pairs of people at a picnic. But the bigger people eat more and are very hungry so they should have more sandwiches than the smaller people.

Talk about how many sandwiches the people might eat, for example, three each for the smaller people, five each for the middle-sized people and six each for the bigger people.

Explain that each person in each pair must have the same number of sandwiches to make it fair, and also that there might be lots of sandwiches left over in case some extra people come to the picnic.

Deal with just one pair of people at a time.

? How many sandwiches are you going to give to the pair of smaller people? Have they both got the same number? How do you know?



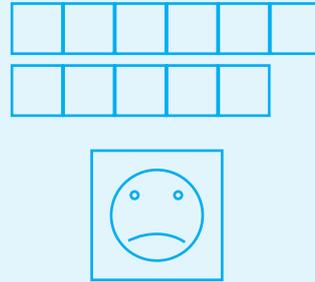
If the child is struggling with this, help them to 'move and count' and to say how many sandwiches that person has. You might find it helpful to write the number of sandwiches or place the relevant number card next to the person.

? This person has three sandwiches, so how many shall we give to this other person who is the same size?

Explain that it must be fair. These two people of the same size need the same number of sandwiches.

If the groupings are still unequal, encourage the child to line up the cubes and to compare them.

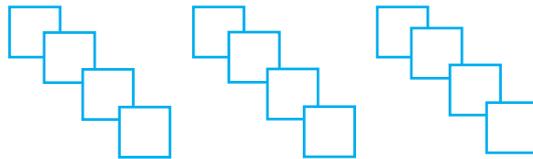
‘This person has more and this person wants the same number to make it fair. Look, she is sad.’



? How many more do you need to give her?

If the child is still unable to compare the groups and talk about the numbers being the same or fair, you might want to try the activity again at a later date with some real sweets to share fairly with another child.

Put out some equal groups of cubes using a colour not used above, maybe three groups with four cubes in each group.



? What can you tell me about these three groups?

Spotlight 1

Makes unequal groups and is unable to compare the groups

Opportunity for: exploring a real-life context

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Pennies in purses

Time 10–15 minutes

Resources

- Twelve 1p coins and four containers
- Four smiley faces on paper (all the same size)
- Small world people, character toys

Key vocabulary

- | | |
|--------------|-------------|
| equal groups | fewer |
| more | same number |
| less | too many |

Teaching activity

‘We are going to do a sharing activity today with 1p coins and containers, so that the people all have an equal number of 1p coins and it is fair.’

Put out three people (smiley faces) with a container each.

? How many people are there? How many containers?

? How many containers does each person have?

Take six 1p coins and ask the child to put them in the three containers so that each person has the same number.

If this proves too challenging, help them to count the 1p coins.

‘I think this person has fewer than that person. Let’s count them carefully.’ (Use ‘move and count’.)

? Does this person have more than that person?

? How can you make each person have the same number of 1p coins?

If you have time, move on to either having four people and eight or twelve 1p coins, or keep three people and use nine 1p coins. You could ask the child to record their work in any way they want. This can give you an insight into their thinking.

? Do you think you were successful in making equal groups today?

Spotlight 2

Makes unequal groups and is unable to compare the groups

Opportunity for: developing mathematical language



Comparing cod

Time 10–15 minutes

Resources

- Three toy cats or penguins or bowls
- Nine, twelve or fifteen toy fishes

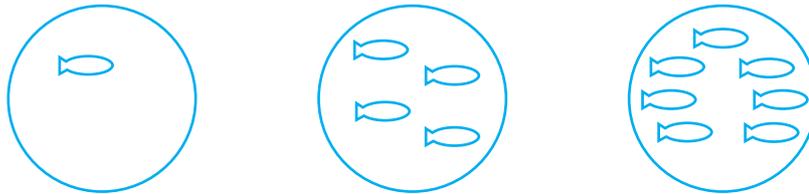
Key vocabulary

| | |
|--------------|-------------|
| equal groups | fewer |
| more | same number |
| less | too many |

Teaching activity

Choose some kind of context for the activity, for example, penguins being fed at the zoo or cats and their food bowls. Display three toy penguins or cats or bowls with nine or twelve or fifteen fish in total, making each group unequal.

'We're going to be working on making equal groups again today. I'm sharing out these twelve fishes, so that each cat/penguin will get an equal amount. Then that will be fair.'



Listen carefully to what the child says and develop your questioning in line with their response. You are trying to use a wide range of comparing words, for example 'fewer', 'more than', 'too many', and so on (see key vocabulary above).

- ? Do you think the penguins/cats will think that is fair? Why not?**
- ? Can you tell me which penguin/cat has the fewest fishes?**
- ? Can you point to a group that has less than this one?**
- ? Can you point to a penguin/cat that has more than this one?**
- ? How could we make equal groups now?**

If the child is finding the sharing and comparing too challenging, repeat the activity in a different context, for example, feeding dolphins, or putting biscuits on plates.

Support the child in making equal groups, establishing that each group must contain the same number.

- ? Can you tell me what you are doing as you move the fishes?**

Encourage the child to count carefully, doing 'move and count' if they get muddled.

- ? Can you tell me about these groups now? Are they equal?**

Ask the child to make a picture or some other recording of what they have done today.

- ? What did you learn today?**
- ? What would you like more help with?**

Spotlight 3

Makes unequal groups and is unable to compare the groups

Opportunity for: reasoning about numbers

Apples on the plate

Time 10–15 minutes

Resources

- Four paper plates
- Twenty apples or cubes
- Four small world people or character toys or smiley faces

Key vocabulary

- | | |
|--------------|-------------|
| equal groups | fewer |
| more | same number |
| less | too many |

Teaching activity

‘Today we are going to do an activity with these apples and plates to learn more about putting things into equal groups.’

You could set it in a real context, for example, sharing fairly between children or feeding apples to horses or to monkeys at the zoo.

Put out three plates and count the twelve apples with the child.

? Can you make a guess at how many I can put on each plate to share the apples out fairly?

You can start to distribute the apples unequally on the plate, putting far too many on the first plate.

? Do you think we have enough apples to give everyone this many?

Ask the child to share out the twelve apples fairly.

If the child needs help with making equal groups or comparing the groups, work with them to count and compare the numbers using the key vocabulary. (See above.)

? This plate has eight apples and that is too many. This plate only has three. Could you help me to take some from this plate and put them with this apple to make the groups equal so it is fair?

? Which plate has fewer than this plate?

? Can you make it fair?

When the three plates have four apples each, encourage the child to count and to talk about and explain what they have done.

? Can you tell me if the apples are all now in equal groups?

? How many are in each group?

? How many groups are there? How do you know?

Repeat the activity, working with four plates. Use twelve apples or cubes again for children who need that support, or move on to using sixteen or twenty apples or cubes.

? Does each plate have the same number? How can you be sure?

If there is time, ask the child to choose their own number of plates and to choose a number of apples that they think will go into equal groups on those plates.

? What did you learn today about equal groups?

Spotlight 4

Makes unequal groups and is unable to compare the groups

Opportunity for: solving practical problems

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Knock knock

Time 10–15 minutes

Resources

- Paper plates
- Twelve pretend 'chocolate chip cookies'

Key vocabulary

| | |
|--------------|-------------|
| equal groups | fewer |
| more | same number |
| less | too many |

Teaching activity

'We're going to share out these twelve chocolate chip cookies so that you and I have an equal number.'

? Can you put them in two equal groups?

If the child struggles with that, keep encouraging the child to count, using words such as 'too many in that group' and 'all the groups need to have the same number'.

? Now we have six for you and six for me. Are they in equal groups? How do you know?

Then knock on the table.

'Jed is at the door and he has come to see us. Let's give him some of the cookies.'

? Can you share them into equal groups for three people?

? How many have we each got now?

? Are you sure they are in equal groups?

Knock on the table again. 'Oh look, Ali has come as well.'

? What can we do so that Ali can have an equal share with us?

? How many people now want to share the cookies?

? How can you be sure that the cookies are in equal groups?

? If we put the cookies into equal groups of two, how many people could have two cookies each?

Ask the child to tell you something they have learned today about putting twelve into equal groups.



How many different ways can you find to put twelve objects into equal groups?

Spotlight 5: a learning check

Makes unequal groups and is unable to compare the groups

Opportunity for: explaining and discussing

Cherry buns

Time 10–15 minutes

Resources

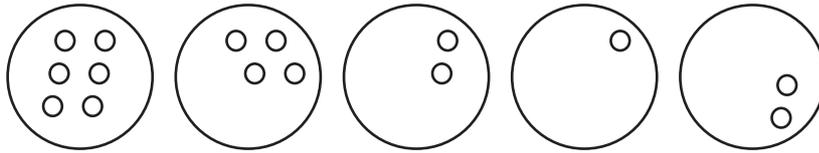
- Round counters or beads (red and other colours)
- Play buns or circles of paper
- Two sizes of sweets or small objects such as linking cubes
- Number cards (Resource sheets 1 and 2)

Check: does the child use key vocabulary?

- | | |
|--------------|-------------|
| equal groups | fewer |
| more | same number |
| less | too many |

Teaching activity

Prepare five buns and distribute fifteen cherries (red counters) unequally on them while explaining that today we are going to pretend we are bakers who make cherry buns and we must put an equal number of cherries on each bun. But look at the buns! Something is wrong.



? What's wrong with this bun? (You are looking for the child to say there are too many cherries on the bun – so the cherries aren't in equal groups.)

? Do you think you could put the cherries equally on the buns?

Ask the child to tell you what they are doing as they do it. Listen to see if the child can talk through the activity using the key vocabulary.

? How many cherries are on each bun now?

? Are the cherries in equal groups?

If the child still seems unsure about equal grouping, ask them to count each red counter carefully and ask them, using circles of paper, to draw an equal number of cubes (cherries) on each bit of paper so that it is fair and so that they have made a picture of the buns. Ask the child either to find the right number cards for each circle, or to write down the correct number of cherries.

With two circles of paper, display about four large blue counters/sweets on one bit of paper and about seven small blue counters/sweets on the other.

Talk through whether this would be a fair way to share sweets – giving four large ones for one person and seven small ones for the other person. (This could be a fair way to share food, with someone having more smaller items. And some people need more food than others.) Then focus on the *number* of cubes.

? Does one person have more sweets than the other when you count them?

Encourage the child to count and talk about the numbers and establish that one person has more when you count the number of sweets.

Remove the small cubes/sweets and ask the child to put out enough large cubes/sweets for each person to have the same number of the same size.

? **What are you trying to do?** (*You are looking for the child to talk about having the same number in each group.*)

? **Can you explain to me what putting things into equal groups means?**

If this proves too challenging for the child to explain, ask them to make unequal groups with counters and to tell you how they know the groups are unequal. Then ask them to move the counters to equal groups and to explain what they are doing.

Learning outcomes

By the end of this set of activities, children should be able to:

- tackle related learning tasks with increased motivation and confidence;
- use and understand connected mathematical vocabulary;
- put objects into equal groups and explain what they are doing;
- use the language of comparison to compare groups and say which ones have too many or too few items;
- apply mathematics in simple real-life contexts.