

## When sharing, can sometimes make equal groups but has no strategies to deal with any left over

*Opportunity for: developing mathematical strategies*

### Resources

- Items for sharing, for example, real biscuits, hard sweets, cubes, chocolate bars, pens

### Key vocabulary

fair	predict/guess
share out	share between two/three
left over	groups
same number	

### Teaching activity

**Time** 10–15 minutes

'Today we are going to do some fair sharing with cubes/sweets and biscuits. This activity will help you to share fairly and find out what to do when things are left over.'

**? What do you think fair sharing means?**

**? Can you share these seven cubes/sweets equally between you and me?**

Help the child to talk through the sharing.

If the child has no strategies at all for sharing, try out 'one for me, one for you' sharing.

**? How many do we have each? Is it fair?**

Help the child to count how many there are in each group.

If the child has not shared fairly and the groups are unequal, talk about being fair, then do some more sharing with real items until the child has grasped that everyone must have the same number of items.

When the objects are in equal groups, talk about how fair it is now that everyone has the same number. You could draw two smiley faces.

**? What about this one sweet/cube left over?**

Listen carefully to the child and build on their ideas. If the child seems to want to do something with the left-over sweet/cube, try sharing between two using seven biscuits or something else that can be broken easily.

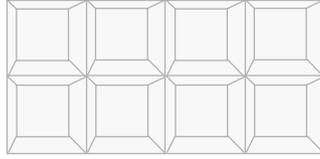
**? What could you do this time with the one biscuit left over?**

Make the point that you can break a biscuit to share it fairly, but you can't cut a hard sweet in two very easily and you mustn't break the school cubes!

Break the biscuit into two if the child doesn't suggest that.

Help the child to come to some real-life solutions. You could break the biscuit into two bits, or one of you could have an extra one, or you could put it back in the tin.

Repeat the activity with other items that can be split, such as a bar of chocolate.



- ? Can you share this bar of chocolate fairly between five people?
- ? How much would they get each?
- ? What could we do with the chunks of chocolate left over?

Talk with the child about splitting the chocolate between different numbers of people.

If the child is having difficulty with this, you might find it helpful to ask them to draw pictures, and/or write, or you write for them, to record what they have been doing. This can give you insight into their thinking. If you feel they need extra help, you could repeat the activity another day with a bar of chocolate that is divided differently from the one above.

If you have time, do another activity with items you can't split, for example, pens.

- ? What did you learn today about sharing fairly and left-over items?

The child can record what they did in their own way, perhaps with just one of the items used.



You could make a list with the whole class of different strategies to deal with left-over items. You can cut food, put biscuits back in the tin, put money back in a purse, agree to share things like pens. What else?

This can make a useful homework task – 'How we share things fairly in our family'.

## Spotlight 1

When sharing, can sometimes make equal groups but has no strategies to deal with any left over

*Opportunity for: exploring a real-life context*

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### Beanbag sharing

**Time** 5–15 minutes

#### Resources

- PE items (balls, beanbags, and so on)
- Classroom items (pens, and so on)

#### Key vocabulary

fair	same number
share out	predict/guess
left over	groups
share between two/three	

### Teaching activity

In PE lessons and in ordinary classroom activities, try to give further help with sharing and things left over. Explain that the child is going to have some extra practice with sharing because it is such an important thing to learn. And in particular they will be learning about what to do with any left-over things.

Organise the class into, say, six groups. Ask the child to share the basket of beanbags equally between the groups (checking first that there will be some beanbags left over).

**? Can you share out these beanbags equally between our six teams of children?**

**? How many does each group have? Is that fair?**

**? What shall we do with the beanbags left over?**

In this situation, a real-life way of dealing with the left-over beanbags is not to cut them up like you might a cake!

Repeat with pens, and so on, in the classroom.

**? If we share out these eleven pens equally between you and your four friends, do you think there might be some left over?**

Let the child share them out equally and decide what to do with the left-over pen.

**? What have you learned about sharing today?**

## Spotlight 2

When sharing, can sometimes make equal groups but has no strategies to deal with any left over

*Opportunity for: reasoning about numbers*



### Sharing sweets

**Time** 10–15 minutes

#### Resources

- Paper with hands drawn on it, or small world people, or character toys
- Hard sweets to share out

#### Key vocabulary

fair	same number
share out	predict
left over	groups

#### Teaching activity

Explain that today we are going to work on sharing fairly. Three children are holding out their hands to have a fair share of five sweets.



- ? If we share these five sweets out fairly between these three children, do you think there will be some left over?**

Help the child to predict first, then to see if they are right by sharing.

- ? How many sweets do they have each? Is it fair? Are you sure?**
- ? We can't break the sweets so what shall we do with the left-over ones?**

Try to draw out some sensible answers about what to do with the sweets.

- ? If we had five real currant buns and a knife, what could we have done?**

If the child is finding this too challenging, you could repeat the activity with three hands, using a different number of items to share.

- ? Can you think of a number we could share equally between three people?**

Try the activity with other numbers of hands.



- ? How many hands have we got this time? If we have three sweets, can they have one sweet each? Why not?**

Let the child try sharing three sweets between four people and see that there are not enough for them to have one each.

- ? What if we have six sweets? Are there enough for one sweet each?**

Let the child do the sharing and talk about the sweets left over.

- ? Can you count some more sweets out of the box, taking enough so that everyone has two each?**

Help the child to work this out in a practical way.

- ? Did we have any sweets left over?**

- ? So what can you tell me about eight sweets and four people?**

- ? If we had one more sweet, so now we have nine, can you predict if they will share out equally between four people with none left over?**

- ? Can you take enough sweets so that each person will have three (or four) each? Can you work out how many more you need to take?**

- ? What have you learned today about equal sharing and coping with left-over things when you share?**

## Spotlight 3

When sharing, can sometimes make equal groups but has no strategies to deal with any left over

*Opportunity for: exploring a real-life context*

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### Pocket money time

**Time** 10–15 minutes

#### Resources

- 1p coins in a purse
- Three other containers
- Pictures of three people or three small world people or character toys

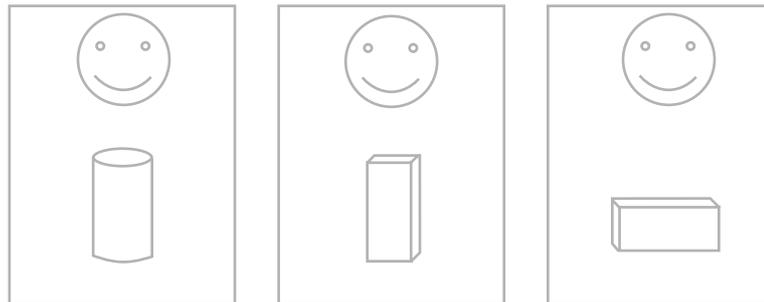
#### Key vocabulary

- |           |             |
|-----------|-------------|
| fair      | same number |
| share out | predict     |
| left over | groups      |

#### Teaching activity

Show the child the 1p coins and explain that you are going to pretend to be Mum/Dad/carer giving three children their pocket money. Show the three containers and representative people and explain that the activity will help the child to learn more about equal sharing and working out what to do with leftovers.

Ask the child to pretend that there are three children and that they are all going to be given an equal amount of pocket money, so that it will be fair.



**? If Mum/Dad/carer has three pence, how many pence each can they have? Is there any money left over? Why?**

Support the sharing into the three containers.

**? What if Mum/Dad/carer has three more 1p coins? How many can they have each? Are there any left over?**

Put out some more 1p coins from the purse (make sure there will be some left over).

**? Can you give them some more 1p coins so that they all have a fair share?**

**? How many can they have each?**

**? Do they all have the same number?**

**? Are there any 1p coins left over?**

If the child is struggling with this, spend time helping them to talk about what their parent/carer might do in this situation. Try to make sure that they can use the key vocabulary above and that they can talk about equal groups with the same number of objects in them.

Explain that any spare money will go back into the purse. Mum/Dad/carer is going to keep it to buy things at the shop. When Mum/Dad/carer gave out the pocket money she counted out the 1p coins carefully so that each person had the same and none were left over.

Talk the child through the three children going to the shop and spending all their money buying comics and crisps. (If you can engage the child at this stage about the actual prices of comics and so on, it might give you insight into how familiar the child is with real money in real situations.)

- ? What did you learn today about sharing equally?**
- ? Where did the left-over 1p coins go?**
- ? What else could Mum/Dad/carer have done with the left-over 1p coins?**

## Spotlight 4

When sharing, can sometimes make equal groups but has no strategies to deal with any left over

*Opportunity for: developing mathematical language*

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### Fair shares between two

**Time** 10–15 minutes

#### Resources

- 1p coins
- Two purses or containers
- Number cards 2–10 or 2–20 (Resource sheets 1 and 2)
- Pictures of two people or two small world people or two character toys
- 100-square

#### Key vocabulary

fair	share between two
share out	count in twos
left over	groups
same number	lots of
predict	

#### Teaching activity

Explain that today the activity will help them to count in twos and to share fairly.

Give the problem a real-life setting, for example, the child and her brother going shopping.

‘Mum/Dad/carer says you must have the same number of 1p coins each. It must be fair. She gets out two 1p coins.’ Put a number 2 card on the desk.

**? Can you share these two 1p coins between you and James? Is it fair? Do you have the same number of coins each?**

**? Can you explain to me what you did?**

Give the child two more 1p coins and ask them to share them out fairly. Talk about how many coins they have each and put down a number 4 card.

Ask the child to count out enough pennies so that each child has three 1p coins.

**? How many 1p coins are there altogether? Can you count them?**

Use the language of ‘two lots of three makes six’ and ‘if you share six equally between two they get three each’. Put down a number 6 card.

**? Are there any 1p coins left over? Why not?**

Help the child to talk about this using the key vocabulary above.

**? Can you put out enough 1p coins so that you and James have four each? How many 1p coins is that altogether?**

‘Two lots of four make eight altogether. If you share eight 1p coins equally between two, they have four each and none left over.’

**? What number do you think comes next with the number cards? Let’s read them carefully.**

‘Two, four, six, eight. Find the numbers on a 100-square.’

**? Shall we see if you are right and ten is the next number in the pattern? Were you right?**

? **So if we share out ten 1p coins equally between two people, are there any left over?**

Try to establish that, if you count in twos, all the numbers will always share equally between two people with none left over.

? **What if we had nine 1p coins? Could two people have five each? Why not?**

Support the child in sharing out the nine 1p coins equally and clarify that there will be one left over. There needs to be one more to have five each. We can't cut the penny in half.

? **What is special about sharing the numbers two, four, six, eight, ten between two people?**

*(Try to get the child to explain that they can be shared out equally between two people with none left over.)*



Extend the pattern beyond ten with the whole class, counting in twos to 100 while you point to the numbers on a large 100-square. Ask what is special about these numbers when sharing between two.

? **So can you predict if seventy-eight will share out equally between two people with none left over?**

## Spotlight 5: a learning check

When sharing, can sometimes make equal groups but has no strategies to deal with any left over

*Opportunity for: explaining and discussing*

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### Cut it up

**Time** 10–15 minutes

#### Resources

- Range of things to share that you haven't used in previous activities, for example, apples, marbles, beads, bricks
- Slices of bread and a blunt knife
- Real or pretend food made with modelling material
- Small world people, puppets or character toys

#### Check: does the child use key vocabulary?

fair	predict
share out	share between two
left over	groups
same number	

### Teaching activity

Remind the child about the equal sharing that they have been doing.

- ? Tell me what you think it means to put things in equal groups. You can use anything on the table to show me what you mean.**

Build on what the child says.

- ? Can you put these nine apples (or other items) into equal groups so that two small world people can share them and both have the same number of apples each?**

Support the child in talking about the sharing.

If the child ignores the apple left over, prompt with questions about what to do with it.

- ? How many apples each do the people have? Is that fair?**
- ? What can you do with this one left over?**

Establish that any left-over apples can be cut up to make it fair.

Move on to sharing three slices of bread equally between two people.

- ? What can you do with the third slice?**

Prompt the child to cut it so that each person has half.

Move on to sharing out bricks.

- ? Can you share out these five/seven/nine bricks equally between two people? Can you predict first what is going to happen?**

- ? What can you do with the left-over brick?**

Establish that you mustn't cut it up! Talk through what two children playing might do when they are sharing out the bricks.

- ? Can you count out enough bricks so that both of us will have three each with none left over?**

Support the counting and the sharing.

**? Can you tell me another number, larger than six, which will make equal groups between two people with none left over?**

Prompt for eight, ten, and so on.

**? What about seven? Can you make a guess first whether seven will share out with none left over?**

If the child needs another context for you to assess their understanding, put out three or more small world people and ask the child to share out sweets and explain to you exactly what they are doing.

**? Can you explain to me why we sometimes put things in equal groups?**

**? Can you tell me some of the things that can be cut up to share equally and some that can't?**



Explore with all the class the kinds of things that they share at home and what happens to the bits left over. How is a packet of eight sausages shared out in a family of five?

### **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;
- share items fairly;
- predict numbers that will share fairly;
- explain some strategies for dealing with items left over.

# Notes