# Challenging tasks

# Early Stage 1

Name:

Class:

## Activity 1

During this activity you will need to think like a mathematician to solve the following problem and find multiple solutions.

Resources – pencil and paper to record your thinking.

### Activity 1 – Heads and feet

On a farm there were some hens and sheep.
Altogether there were 8 heads and 22 feet.
How many hens were there?

https://nrich.maths.org/primary

Advice for parents: encourage your child to have a guess first and then get them to record their thinking. They could draw pictures of the animals or if they have farm animals at home they can use them to help them organise their thinking.

Possible questions you could ask your child:
What are some ways you can work this out?
Why did you work it that way?
Can you tell me how you got that answer?

Record your thinking and share this learning with your teacher.

# Reflection

Draw your favourite part of solving this problem. Can you create a similar problem? Give your problem to a family member to solve.

| Star<br>Something that went well! | Star<br>Something that went well! | Wish<br>A goal for next time… |
|---|---|---|
| | | (What is something you would do differently if you were to play the game again?) |

# Challenging tasks

# Stage 1

Name:

Class:

## Activity 1 – What are my two numbers?

During this activity you will need to think like a mathematician to solve the following problem and find multiple solutions.

Resources – pencil and paper to record your thinking and concrete materials if needed such as blocks, pasta shapes, beans or straws.

## Activity 1 – What are my two numbers?

I am thinking of two numbers on the number chart.
One number is 15 more than the other.
One of the numbers has a 3 in it.
What might be my two numbers?

- Give as many reasons as you can.

Advice for parents: encourage your child to think about different ways they could solve this problem. Give them concrete materials if they need help to work it out. For example they could use blocks, pasta shapes, beans or straws. Encourage your child to their record their thinking and to try and think of more than way to find the answer.
Possible questions you could ask your child:
What are some ways you can work this out?

Why did you work it that way?
Can you tell me how you got that answer?
Can you think of a different way to find the answer?

Record your thinking and share this learning with your teacher.

# Reflection

Draw your favourite part of solving this problem. Can you create a similar problem? Give your problem to a family member to solve.

| Star<br>Something that went well! | Star<br>Something that went well! | Wish<br>A goal for next time… |
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| | | (What is something you would do differently if you were to play the game again?) |

# Challenging tasks

# Stage 1

Name:

Class:

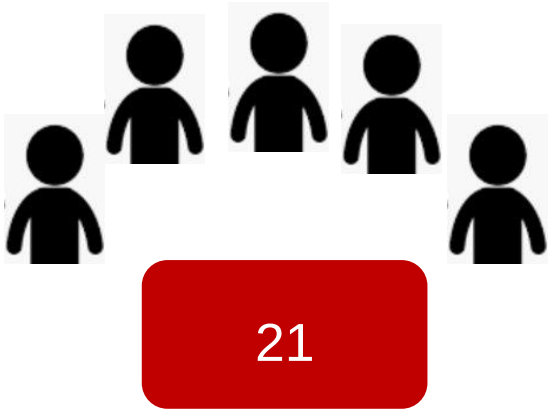
## Activity 1

During this activity you will need to think like a mathematician to solve the following problem and find multiple solutions.

Resources – pencil and paper to record your thinking and concrete materials if needed such as blocks, pasta shapes, beans or straws.

## Activity 1 – Students with counters

Five students have 21 counters between them.
Two pairs of students have the same number of counters.
How many counters might each student have?



Advice for parents: encourage your child to think about different ways they could solve this problem. Give them concrete materials if they need help to work it out. For example they could use blocks, pasta shapes, beans or straws to represent the counters and/or students. Encourage your child to their record their thinking and to try and think of more than way to find the answer.

Possible questions you could ask your child:
What are some ways you can work this out?
Why did you work it that way?
Can you tell me how you got that answer?
Can you think of a different way to find the answer?

Record your thinking and share this learning with your teacher.

# Reflection

Draw your favourite part of solving this problem. Can you create a similar problem? Give your problem to a family member to solve.

| **Star**<br>**Something that went well!** | **Star**<br>**Something that went well!** | **Wish**<br>**A goal for next time…** |
|---|---|---|
| | | (What is something you would do differently if you were to play the game again?) |

# Challenging tasks

## Stage 2

Name:

Class:

### Activity 1

During this activity you will need to think like a mathematician to solve the following problem and find multiple solutions.

Resources – pencil and paper to record your thinking.

### Activity 1 – Subtraction task

I did a subtraction task and the answer was 215 but I cannot remember the other numbers. Find as many solutions to this subtraction as possible.

| ? | - | ? | = | 215 |
|---|---|---|---|---|

Peter Sullivan and Pat Lilburn, 2017 Open – ended maths activities

Advice for parents: encourage your child to think about different ways they could solve this problem and to record their thinking. Encourage them to think of more than way to find the answer.

Possible questions you could ask your child:
What are some ways you can work this out?
Why did you work it that way?
Can you tell me how you got that answer?
Can you think of a different way to find the answer?

Record your thinking and share this learning with your teacher.

# Reflection

Did this challenge you?

Why or why not?

Can you create a similar problem? Give your problem to a family member to solve.

| Star<br>Something that went well! | Star<br>Something that went well! | Wish<br>A goal for next time… |
|---|---|---|
| | | (What is something you would do differently if you were to play the game again?) |

# Challenging tasks

# Stage 3

Name:

Class:

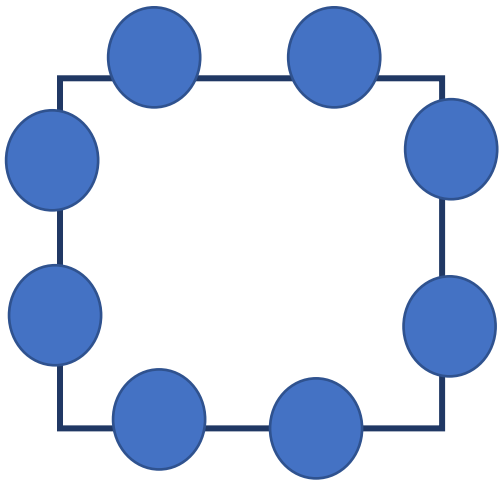
## Activity 1

During this activity you will need to think like a mathematician to solve the following problem and find multiple solutions.

Resources – pencil and paper to record your thinking.

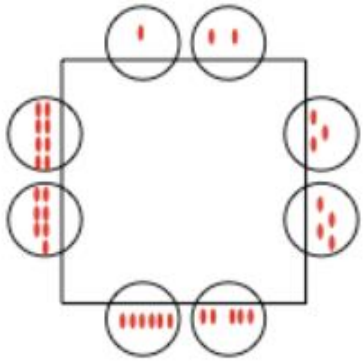
## Activity 1 – Sitting round the table

You are at the party and sitting around the table with seven friends.



At the top left hand corner is he friend who is giving the party. She or he has a bag of sweets and starts giving them out in a clockwise direction: one for themselves, two for the next person and three for the next and so on.

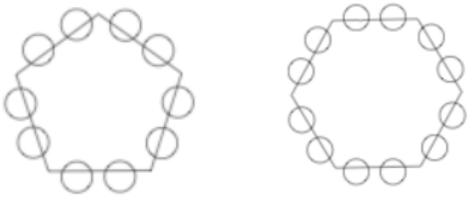
https://nrich.maths.org/primary



There are other similar parties going on at the same time. They have bigger square tables with more children sitting round on each side.
Explore and compare all the tables: 2 on each side, 3 on each side, 4 on each side and 5 on each side.

You could look at:
the total number of sweets that children sitting opposite each other have;
the total number of sweets needed for each size of the table;
the total number of sweets belonging to children who are diagonally opposite.

Then, consider what about five- and six-sided tables?



Advice for parents: encourage your child to think about different ways they could solve this problem and to record their thinking. Encourage them to think of more than way to find the answer.

Possible questions you could ask your child:
What are some ways you can work this out?
Why did you work it that way?
Can you tell me how you got that answer?
Can you think of a different way to find the answer?

Record your thinking and represent your findings in a visual way and share this learning with your teacher.

# Reflection

Did this challenge you?

Why or why not?

Can you create a similar problem? Give your problem to a family member to solve.

| Star<br>Something that went well! | Star<br>Something that went well! | Wish<br>A goal for next time… |
|---|---|---|
| | | (What is something you would do differently if you were to play the game again?) |

# Challenging tasks

# Stage 3

Name:

Class:

## Activity 1

During this activity you will need to think like a mathematician to solve the following problem and find multiple solutions.

Resources – pencil and paper to record your thinking and a calculator if needed with the zero covered.

## Activity 1 – Broken calculator

What if you had to use a calculator to work out 2000-143 and the zero button was broken. How could you do it?


C.Attard, 2013. Engaging Maths: Higher order thinking with thinkers keys

Advice for parents: encourage your child to think about different ways they could solve this problem and to record their thinking. Encourage them to think of more than way to find the answer.

Possible questions you could ask your child:
What are some ways you can work this out?
Why did you work it that way?
Can you tell me how you got that answer?
Can you think of a different way to find the answer?

Record your thinking and share this learning with your teacher.

# Reflection

Did this challenge you?

Why or why not?

Can you create a similar problem? Give your problem to a family member to solve.

| **Star**<br>**Something that went well!** | **Star**<br>**Something that went well!** | **Wish**<br>**A goal for next time…** |
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| | | (What is something you would do differently if you were to play the game again?) |