Reasoning in the classroom

Mrs Jones likes tea

Support materials for teachers

Year 3

Year 3 Reasoning in the classroom – Mrs Jones likes tea

These Year 3 activities, set in the context of drinking tea, enable learners to apply and extend their reasoning skills.

Activity 1

Mrs Jones likes tea
Learners use their understanding of time and multiplication (or repeated addition) to find how many cups of tea Mrs Jones drinks each day.
Includes:
- Mrs Jones likes tea question
- Markscheme

Activity 2

Tea survey
They carry out a simple survey to compare the tea-drinking patterns of friends and family with published data for the UK.
Includes:
- Explain and question – instructions for teachers
- Whiteboard – Fact about tea in the UK
- Whiteboard – Things for us to think about
- Whiteboard – Drinking tea questionnaire
- Resource sheet – Drinking tea questionnaire

Reasoning skills required

Identify	Communicate	Review
Learners use their numerical understanding to solve simple problems. They then identify simple questions to include in a questionnaire.	They make their own choice of how to present their findings.	They check and compare their findings.

Procedural skills
- **Time**
- **Multiplication (or repeated addition)**
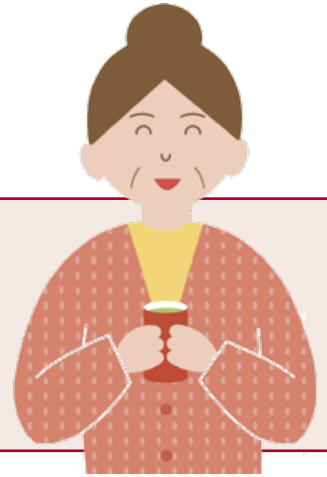- **Bar chart (or similar)**

Numerical language
- **Most**
- **Least**

Mrs Jones likes tea

Activity 1 – Mrs Jones likes tea

Outline

In this activity learners bring together their understanding of time and multiplication (or repeated addition) to solve a problem.

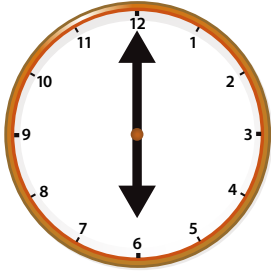They choose their own method and decide for themselves what to write down.

You will need

Mrs Jones likes tea question
One page for each learner

Markscheme

Mrs Jones loves drinking tea!

At **6am** she drinks **two** cups.

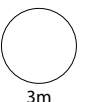Then **every two hours** she drinks **three more** cups until

at **10pm** she drinks **two** cups before bed.

Altogether, how many cups of tea does she drink in one day?

cups

3m

Activity 1 – Mrs Jones likes tea – Markscheme

Marks	Answer
3m	**25**
Or 2m	Shows or implies that from 8am to 8pm inclusive she drinks **21** cups of tea Or Shows a method that would lead to 25 if calculated correctly, e.g. • $7 \times 3 = 18$ (error), then add 2, then add 2 • $2 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 2 = 20$ (error)
Or 1m	Shows understanding of when she is drinking tea, e.g. • 8, 10, 12, 2, 4, 6, 8 marked on the clock

Activity 1 – Mrs Jones likes tea – Exemplars

At **6am** she drinks **two** cups.

Then **every two hours** she drinks **three more** cups until

at **10pm** she drinks **two** cups before bed.

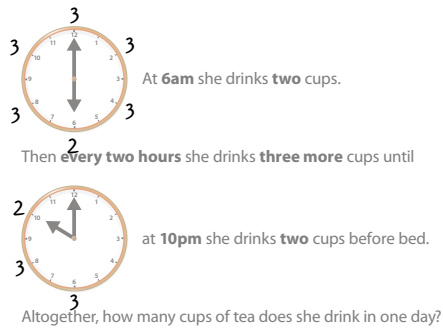Altogether, how many cups of tea does she drink in one day?

I add in my head

| 25 | cups |

Correct; **3 marks**

- The use of the clocks shows effective numerical communication.

I counted round and got 7 times when she does drink 3 more cups and 2 times when she does drink 2 cups then I did 7 x 3 = 21 and I added on 4 so how I got 25

| 25 | cups |

Correct; **3 marks**

- This learner shows their understanding of multiplication.

At 6 o'clock she drinks 2 cups of tea.
At 8 o'clock she drinks 3 cups of tea.
At 10 o'clock she drinks 3 cups of tea.
At 12 o'clock she drinks 3 cups of tea.
At 2 o'clock she drinks 3 cups of tea.
At 4 o'clock she drinks 3 cups of tea.
At 6 o'clock she drinks 3 cups of tea.
At 8 o'clock she drinks 3 cups of tea.
At 10 o'clock she drinks 2 cups of tea before bed.
I did
2 + 3 = 5 + 3 = 8 + 3 = 11 + 3 = 14 + 3 = 17 + 3 = 20 + 2 = 22

| 22 | cups |

Correct method; **2 marks**

- This work shows understanding but the learner has lost count when adding the 3's.
- They would benefit from seeing other ways to set out the working, and from discussion about the repeated use of the equals sign.

6am she drink 2
8 she drink 3
10 she drink 2

| | | | | | | |

| 8 | cups |

Incorrect; **0 marks**

- This learner has worked with only three times when Mrs Jones is drinking tea. They need support to understand am and pm.

Tea survey

Activity 2 – Tea survey

Outline

In this activity, learners explore how much tea their families and friends drink. They compare this to the average amount of tea consumed in the UK.

They carry out a simple survey, before deciding for themselves how to collate and present their findings to the rest of the class.

You will need

WB   **Whiteboard – Fact about tea in the UK**

WB   **Whiteboard – Things for us to think about**

WB   **Whiteboard – Drinking tea questionnaire**

R   **Resource sheet – Drinking tea questionnaire**

Activity 2 – Tea survey

Explain

Remind learners that Mrs Jones drinks 25 cups of tea a day. Ask them whether they think this number of cups is low or high, then show **Fact about tea in the UK** on the whiteboard, and discuss.
(Source: www.royalvoluntaryservice.org.uk/news-and-events/news/brits-drink-nearly-11-million-gallons-of-tea-a-day)

Tell them they are going to find out about whether the amount of tea their families and friends drink matches this information or is more like Mrs Jones. They are going to do a survey.

If needed, explain (simply) what a survey is and also introduce the concept of a questionnaire.

To start the process of planning how to carry out their survey, show them **Things for us to think about** on the whiteboard and discuss as a large group.

Then show them **Drinking tea questionnaire** on the whiteboard and discuss.

Give each learner one or more copies of the questionnaire and ask them to carry out their survey with friends and family, recording their findings.

Or
Learners design their own questionnaire, using the prompts in **Things for us to think about**.

In small groups or pairs, they then collate and compare their findings, before drawing conclusions and deciding for themselves how to present these to the rest of the class *(e.g. using a bar chart or pictogram)*.

Their final recordings and conclusions could be displayed in the classroom.

Question

- Is it true that every single person in the UK drinks 3 or 4 cups of tea a day? How do you know it is not true?

- For your survey, how many people are you going to ask? Why does that matter?

- Look at your results. Who drinks the most tea each day? Who drinks the least?

- How are you going to bring all your results together?

- Are your results similar to other people's results? Or different? What does that tell us?

- What conclusions can you draw? How are you going to present your findings so that other people can understand them?

Many people drink 3 or 4 cups of tea every day.

Things for us to think about

What do we want to know?

What questions will we ask?

Who are we going to ask?

How can we record people's answers?

Name	How many cups of tea do you usually drink in one day?

Name	How many cups of tea do you usually drink in one day?