Dr Fog Presents

The importance of knowing the size of the wholes when comparing percentages.

Year 6 (National Numeracy Strategy)
(Based on DFEE Sample Lessons)

Resources

- None!

Mental Learning Objective

- Understanding percentage as a fraction of 100.

- Finding and comparing percentages of different quantities.

Mental Learning Task

- Today you are going to be thinking about how to compare percentages

- You will identify some of the errors you may fall into if you don't keep your wits about you.

Mental Learning Task

- Today we are going to start by remembering what different fraction equivalents of percentages are…

Mental Learning Task

- What is the fraction equivalent of…

50%

Mental Learning Task

- What is the fraction equivalent of…

10%

Mental Learning Task

- What is the fraction equivalent of…

25%

Mental Learning Task

- What is the fraction equivalent of…

40%

Mental Learning Task

- What is the fraction equivalent of…

60%

Mental Learning Task

- What is the fraction equivalent of…

0%

Mental Learning Task

- What is the fraction equivalent of…

100%

Mental Learning Task

- Can you tell me what the percentage equivalent is of….

$$\frac{1}{2}$$

Mental Learning Task

- Can you tell me what the percentage equivalent is of….

$$\frac{3}{4}$$

Mental Learning Task

- Can you tell me what the percentage equivalent is of….

$$\frac{9}{10}$$

Mental Learning Task

- Can you tell me what the percentage equivalent is of….

$$\frac{2}{5}$$

Mental Learning Task

- Can you tell me what the percentage equivalent is of….

$$\frac{2}{50}$$

Mental Learning Task

- How did you work out how to change fractions into percentages?

Mental Learning Objective

- Understanding percentage as a fraction of 100.

Main Learning Objective

- Finding and comparing percentages of different quantities.

Key idea

When comparing percentages it is important to know what they are percentages of.

Main Learning Task

- You have to write down the parts of this problem as your teacher reads it out.

- As soon as they have read it out,it will disappear and you will need to rely on your notes.

Main Learning Task

- Jane and Jenny go to different schools both of which are going on a trip to France.
- Jane says 12% of her school are going.
- Jenny says 20% of her school is going so there will be more from her school there.
- Jane says she doesn't agree.
- What do you think?

Main Learning Task

- Ask the pupils to work in pairs
- Do you agree with Jane or Jenny?
- Why do you think this?

Main Learning Task

- Suppose Jenny's school has 150 pupils.
- How many of 20 per cent is this?

- Suppose Jane's school has 300 pupils, what number is 12 per cent of 300?

- How might you work this out?

Main Learning Task

- So Jane's school could have more pupils going than Jenny's, even though the percentage is lower.

Main Learning Task

- Why do we have to be careful when comparing percentages?

- We need to know the size of the whole under discussion.

Main Learning Task

- Is it possible for the two schools to have the same number of pupils going on the trip?

- What size would the schools be?

Reminder:-

Jenny's school had 20% going.

Jane's school had 12% going.

Main Learning Task

- **Simplification:-**
- Pupils work in pairs.
- Pupil 1 writes down a three-digit number and a percentage for pupil 2.
- Pupil 2 then finds the required percentage of the number he or she has been given.
- Without telling their 'answers', the children discuss who they think will have the bigger answer and then compare.

Main Learning Task

- Challenges
- You are going to buy a bike that costs £100 but has been discounted by 10%. Would you prefer the shop to add the VAT (at 17.5%) before or after taking off the discount?

- Choose a single-digit number and a percentage, for example, 5 and 60% then increase the new number by 60%.
- Keep doing it. What number pattern do you get?
- 5 + (60 % of 5) = 8
- 8+ (60% of 8) = 12.8 and so on.

Main Learning Objective

- Finding and comparing percentages of different quantities.

Plenary

- Discuss the answers suggested by the groups.

- One possibility would be for Jane's school to have 500 pupils and Jenny's to have 300.

- In fact any pair of numbers where there two numbers are in the ratio 5:3 will work.

Review of Key Idea

- When comparing percentages it is important to know what they are percentages of.

- Did you learn this today?

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