Reasoning and Problem Solving Step 5: Writing Time

National Curriculum Objectives:

Mathematics Year 1: (1M2) Measure and begin to record time (hours, minutes, seconds)

Differentiation:

Questions 1, 4 and 7 (Reasoning)

Developing Determine and explain whether a statement about time is always or never true. Includes seconds and hours.

Expected Determine and explain whether a statement about time is always or sometimes true. Includes seconds, minutes and hours.

Greater Depth Determine and explain whether a statement about time is always, sometimes or never true. Includes seconds, minutes and hours and time measuring equipment.

Questions 2, 5 and 8 (Reasoning)

Developing Determine and explain whether a unit of time or timing equipment is suitable for the given activity. Includes seconds and hours.

Expected Determine and explain whether a unit of time and timing equipment is suitable for the given activity. Includes seconds and minutes.

Greater Depth Determine and explain whether a unit of time and timing equipment is suitable for the given activity. Includes seconds, minutes and hours with possible use of more than one measurement of time.

Questions 3, 6 and 9 (Problem Solving)

Developing Explore the given task to estimate an amount within a time limit, then carry out the task and compare results. Includes 10 second intervals

Expected Explore the given task to estimate an amount within a time limit, then carry out the task and compare results. Includes 30 second intervals and minutes.

Greater Depth Explore the given task to estimate an amount within a time limit, then carry out the task and compare results. Includes 10 second intervals and minutes.

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Writing Time

Writing Time

1a. Is this statement always or never true?

1b. Is this statement always or never true?

A film is measured in seconds.

Pouring a bowl of cereal is measured in hours.

How do you know?

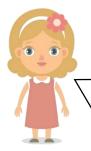
How do you know?



R

2a. Skyla says,

2b. Ibrahim says,



I'm going to try and kick 2 balls. I'm going to measure the time it takes in seconds.



I'm going on a bike ride.
I'm going to measure the time it takes using a sand timer.

Is this a sensible unit of time to use?

Is this the correct equipment to use?

Why?



3a. Use a pencil and a sheet of paper.

3b. Use some bean bags and a hoop.

How many times do you think you can write the number '5' in 10 seconds?

How many bean bags do you think you can throw into the hoop in 10 seconds?

Now try it.

Now try it.

How many more could you write in:

How many more could you throw in:

20 seconds?

20 seconds?

• 30 seconds?

30 seconds?

Was your estimation correct?

Was your estimation correct?





PS



Writing Time

Writina Time

4a. Are these statements always or sometimes true?

1. A race is measured in seconds.

2. An aeroplane flight around the world is measured in hours.

How do you know?

4b. Are these statements always or sometimes true?

- 1. A long car journey is measured in hours.
- 2. A train journey is measured in minutes.

How do you know?



5b. Zainab says,

5a. Sam says,



I'm going on a long car journey. I'm going to use a stop-watch and measure the time it takes in seconds.

- 1. Is this a sensible unit of time to use?
- 2. Is this the correct equipment to use?

Why?





I'm baking a cake. I'm

going to use a sand timer

and measure the time it takes in minutes.

2. Is this the correct equipment to use?

Why?



6a. Use some counters and a container.

How many counters do you think you can put in a pot in 30 seconds if you do them one at a time?

Now try it.

How many more could you do in:

- 1 minute?
- 1 minute and 30 seconds?

Was your estimation correct?



6b. Use some cubes or building bricks.

How many cubes or bricks do you think you can stack in 30 seconds?

Now try it.

How many more could you stack in:

- 1 minute?
- 1 minute and 30 seconds?

Was your estimation correct?





Writing Time

7a. Are these statements always, sometimes or never true?

- 1. A sand timer is used to measure the time to boil an egg.
- 2. Peeling a banana is measured in seconds.
- 3. A day is measured in hours.

How do you know?

Writina Time

7b. Are these statements always, sometimes or never true?

- Playtime is measured in minutes.
- A stopwatch is used to time a 100m 2. sprint race.
- 3. A clock is used to measure time throughout the day.

How do you know?



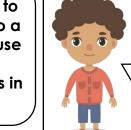
8b. Seb says,

8a. Anya says,



We are going on a boat to Spain and then driving to a camp site. I'm going to use my wrist-watch and measure the time it takes in minutes.

- 1. Is this a sensible unit of time to use?
- 2. Is this the correct equipment to use?



We are driving to the fair and then going on the Big Dipper and Big Wheel. I'm aoina to use a sand timer and measure the time it takes in seconds.

- 1. Is this a sensible unit of time to use?
- 2. Is this the correct equipment to use?

Why?



Why?

How many times do you think you can roll a number higher than four in 1 minute?

Now try it.

9a. Use a dice.

How many more could you roll in:

- 1 minute and 30 seconds?
- 2 minutes?
- 2 minutes and 10 seconds?

Was your estimation correct?

9b. Use a pencil and sheet of paper.

Draw a circle inside a triangle. How many do you think can you draw in 1 minute?

Now try it.

How many more could you draw in:

- 1 minute and 30 seconds?
- 2 minutes?
- 2 minutes and 10 seconds?

Was your estimation correct?





Reasoning and Problem Solving Writing Time

Developing

1a. Never, because films always last longer than seconds. They are usually measured in hours.

2a. Yes, because it only takes seconds to kick a ball.

3a. Answers will vary.

Expected

4a. 1. Sometimes, because it depends on the type of race. For example: a sprint would be measured in seconds.

2. Always, because flight journeys around the world will last longer than seconds and minutes.

5a. 1. No, because long car journeys usually last more than an hour. 2. No, because stop-watches are better used to measure seconds/minutes.

6a. Answers will vary.

Greater Depth

7a. 1. Sometimes, because a sand timer can be the correct amount of minutes.

2. Always, because it is quick and easy to peel a banana.

3. Always, because there are 24 hours in a day.

8a. 1. No, because the journey and multiple transport methods are likely to take longer than an hour.

2. Yes, because hours are easily measured on a wrist-watch.

9a. Answers will vary.

Reasoning and Problem Solving Writing Time

Developing

1b. Never, because pouring a bowl of cereal only takes a few seconds.

2b. Various answers, for example: No, because a sand timer would be difficult to carry while riding a bicycle; a bicycle ride is likely to last longer than an average sand timer.

3b. Answers will vary.

Expected

4b. 1. Always, because a long car journey is likely to last longer than an hour.

2. Sometimes, because it depends where you are travelling. Shorter journeys are measured in minutes and longer journeys are measured in hours.

5b. 1. Yes, because cakes usually take less than an hour to bake.

2. No, sand timers usually last for less than 10 minutes.

6b. Answers will vary.

Greater Depth

7b. 1. Sometimes, because playtime is usually shorter than an hour.

2. Always, because a stop-watch is the most efficient way to measure seconds.

3. Always, because a clock is what we use in everyday circumstances to measure the time of day.

8b. 1. No, because a trip to the fair is likely to be a day trip which will last for hours.

2. No, because an average sand timer only lasts for minutes, not hours and will be impractical to use at a fair.

9b. Answers will vary.

