

# Sleep time



**Support materials for teachers**

Year 4



Llywodraeth Cymru  
Welsh Government

## Year 4 Reasoning in the classroom – Sleep time

These Year 4 activities require learners to work with time.

### Activity 1

#### Sleep time

Learners are asked to work out and compare two different time intervals.

Includes:

- Sleep time question
- Markscheme

### Activity 2

#### What about us?

They then look at their own sleep patterns and compare them with published data.

Includes:

- Explain and question – instructions for teachers
- Whiteboard – How much sleep do children need each day?



## Reasoning skills required

### Identify

Learners consider what information they need.

### Communicate

They decide what information to write down.

### Review

They review their work to check that it makes sense.

## Procedural skills

- Telling the time
- Addition and subtraction
- Data handling

Activity 1

## Sleep time

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## Activity 1 – Sleep time



### Outline

Learners use clocks to compare the sleep times of two children.  
They choose their own method and decide for themselves what to write down.



### You will need

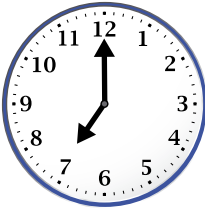


#### Sleep time question

One page for each learner



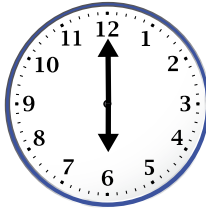
#### Markscheme



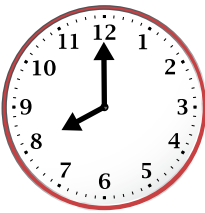
Goes to sleep  
at night



**Olly**



Wakes up  
in the morning



Goes to sleep  
at night



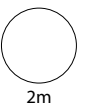
**Lu**



Wakes up  
in the morning

Who sleeps **more**, Olly or Lu?

Show how you work it out.

















## Activity 1 – Sleep time – Markscheme

Marks	Answer
2m	<p>Links <b>Olly</b> to <b>11</b> and <b>Lu</b> to <b><math>10\frac{1}{2}</math></b>, e.g.</p> <ul style="list-style-type: none"> <li>• He sleeps 11 hours, she has 10 and a half</li> </ul> <p>Or</p> <p>Makes an explicit correct statement about who sleeps longer, and shows both <b>11</b> and <b><math>10\frac{1}{2}</math></b>, e.g.</p> <ul style="list-style-type: none"> <li>• 10 and a half, 11, she sleeps less</li> </ul> <p>Or</p> <p>Makes an explicit correct statement about who sleeps longer, by referring to the differences in <b>both</b> bedtime and waking-up time for each child, e.g.</p> <ul style="list-style-type: none"> <li>• He goes to sleep one hour earlier but he only wakes up half an hour before her so he sleeps more</li> </ul>
Or 1m	<p>Shows <b>11</b></p> <p>Or</p> <p>Shows or implies <b><math>10\frac{1}{2}</math></b>, e.g.</p> <ul style="list-style-type: none"> <li>• 10:30 seen</li> </ul> <p>Or</p> <p>Makes a correct statement about the differences in <b>both</b> bedtime and waking-up time for each child, e.g.</p> <ul style="list-style-type: none"> <li>• He goes to sleep one hour earlier but he wakes up half an hour before her</li> </ul>

◀ That Olly sleeps more is implicit

## Activity 1 – Sleep time – Exemplars

 <p>Goes to sleep at night</p>  <p>Olly</p>  <p>Wakes up in the morning</p> <p>He sleeps half an hour more than she does</p>  <p>Goes to sleep at night</p>  <p>Lu</p>  <p>Wakes up in the morning</p>	<p>Correct; <b>2 marks</b></p> <ul style="list-style-type: none"> <li>The correct time intervals are shown by the clocks.</li> </ul>
 <p>I worked out 10 and half and 11 so he does more sleeping</p>	<p>Correct; <b>2 marks</b></p> <ul style="list-style-type: none"> <li>'He does more sleeping' is a correct statement and the two time intervals are correct. Numerical communication would be improved by showing units.</li> </ul>
 <p>He sleeps 11 but she does 9 and 30 so he does more</p>	<p>11 hours shown; <b>1 mark</b></p> <ul style="list-style-type: none"> <li>This learner has made a slip when finding the time interval for Lu.</li> </ul>
 <p>Lu because 8 o'clock is later than 7 o'clock and she went to bed later so she would be more tired</p>	<p>Incorrect; <b>0 marks</b></p> <p> This learner has considered only the times when the children go to sleep.</p>
 <p>Lu sleeps half an hour more</p>	<p>Incorrect; <b>0 marks</b></p> <p> This learner has considered only the times when the children wake up.</p>
 <p>Olly sleeps more I counted how many hours on each clock</p>	<p>No evidence; <b>0 marks</b></p> <p> No method is shown so no marks can be given.</p>

## Activity 2

# What about us?

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## Activity 2 – What about us?



### Outline

Learners use published data to consider the amount of sleep that different age groups require.

They then record their own sleep times, comparing across the class and then with the published data.

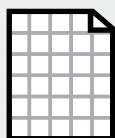
They choose how to present their findings to the rest of the class.



### You will need



**Whiteboard – How much sleep do children need each day?**



**Squared or graph paper**

## Activity 2 – What about us?



### Explain

Ask learners how long they think they sleep each night.

Show **How much sleep do children need each day?** on the whiteboard. This gives the published data relating to sleep patterns for different age children. Discuss how the table shows maximum and minimum amounts of sleep required, stressing that these are guidelines and that some children may need more, or less, sleep than the numbers shown – we are all different.

In small groups/pairs, ask learners to show this information in a bar or line chart.

*(Each bar should be the same width, with a gap between each one.)*

*Maximum and minimum values could be shown on the bars, e.g.*

*Note that a key would need to be given alongside.)*



Next, ask learners to record their own sleeping times – the time they went to sleep (approximately) and woke up, on a set day of the week, and then again on one evening over a weekend.

The learners will need to agree how they will record their data, and then the data for the whole class can be shared.

In their small groups they then decide how to present their findings, including comparing their data to the published data. This can then be shared with other groups, and displayed in the classroom.

### Or

Offer a writing frame to those who need it.



### Question

- What does the published data tell you about the amount of sleep needed for your age group?
- Do you think you will need less or more sleep when you are in Year 5? Year 6?
- What's important when you create bar charts/line graphs? *(For example: title, key, labels, accuracy)* Why are they important?
- Why is it difficult to be certain what time you went to sleep? *(Explore the concept of estimation/approximation.)*
- How are you going to compare the two sets of data?
- What differences in sleep patterns have you found?
- How could we make the data we collected about our sleep patterns more accurate?
- How do you think the published data was collected? Do you think they asked everyone? Or ... ?



## How much sleep do children need each day?

Age in years	Number of hours
Less than 1	14 to 16
1 to 3	12 to 14
4 to 6	10 to 12
7 to 12	$9\frac{1}{2}$ to $10\frac{1}{2}$
13 to 18	$8\frac{1}{2}$ to $9\frac{1}{2}$