# Homework/Extension
## Step 3: Introducing Line Graphs

## National Curriculum Objectives:

Mathematics Year 4: (4S1) Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs

Mathematics Year 4: (4S2) Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs

## Differentiation:

Questions 1, 4 and 7 (Varied Fluency)

**Developing** Interpret data to fill in the blanks in a table and line graph. Graph uses 3 recordings with increments of 1 or 2 on the y axis.

**Expected** Interpret data to fill in the blanks in a table. Graph uses 5 recordings with increments of 1, 2 or 10 on the y axis.

**Greater Depth** Interpret data to fill in the blanks in a table. Graph uses 5 recordings with increments of 1, 2 or 10 on the y axis. Some recordings are between marked increments.

Questions 2, 5 and 8 (Varied Fluency)

**Developing** Interpret data presented in a line graph to answer questions. Graph uses 3 recordings with increments of 1 or 2 on the y axis.

**Expected** Interpret data presented in a line graph to answer questions. Graph uses 5 recordings with increments of 1, 2 or 10 on the y axis.

**Greater Depth** Interpret data presented in a line graph to answer questions. Graph uses 5 recordings with increments of 1, 2 or 10 on the y axis. Some recordings are between marked increments.

Questions 3, 6 and 9 (Reasoning and Problem Solving)

**Developing** Interpret data presented in a line graph to either agree or disagree with a given statement. Graph uses 3 recordings with increments of 1 or 2 on the y axis.

**Expected** Interpret data presented in a line graph to either agree or disagree with a given statement. Graph uses 5 recordings with increments of 1, 2 or 10 on the y axis.

**Greater Depth** Interpret data presented in a line graph to either agree or disagree with a given statement. Graph uses 5 recordings with increments of 1, 2 or 10 on the y axis. Some recordings are between marked increments.
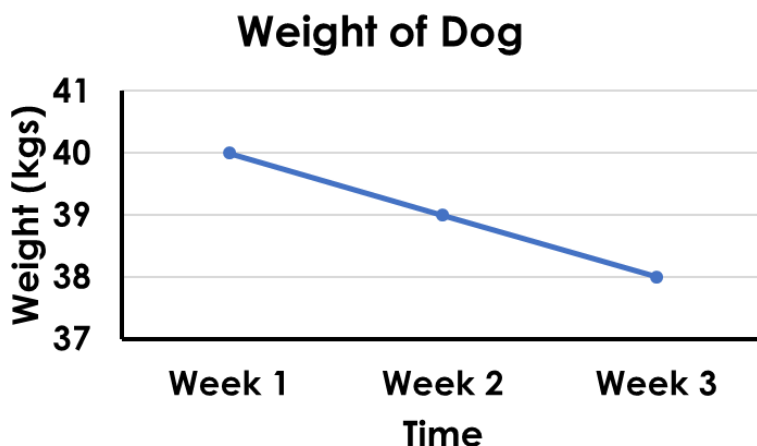
More Year 4 Statistics resources.

Did you like this resource? Don't forget to review it on our website.

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# Introducing Line Graphs

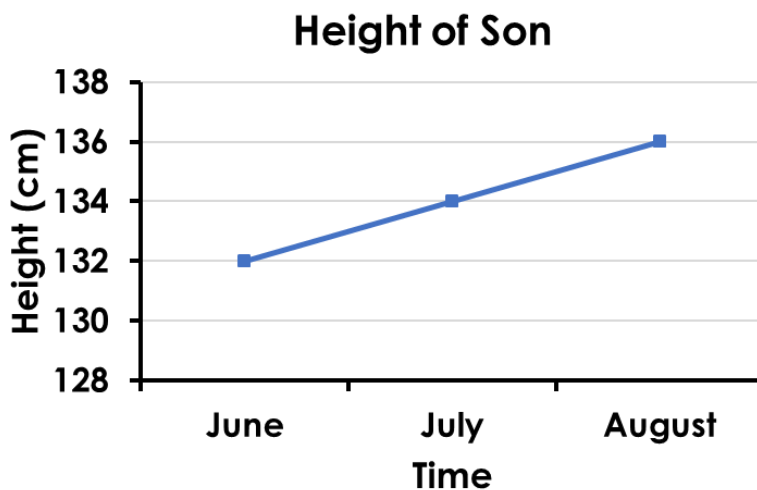**1. Use the information in the line graph about an overweight dog losing weight to fill in all the blanks in the table.**

| Time (weeks) | Weight of dog (kgs) |
|---|---|
| 1 | |
| 2 | |
| 3 | |

### Weight of Dog

**2. A dad is measuring his son's height to see how much he grows in three months.**

A. How tall in the son in August?
B. How much does the son grow between June and July?
C. How many centimetres does the son grow in total over the three months?

### Height of Son

**3. True or false? The information in this table has been correctly converted into a line graph. Class 4 are growing a sunflower. They measure and record its height each day. Explain your answer.**

### Height of Sunflower

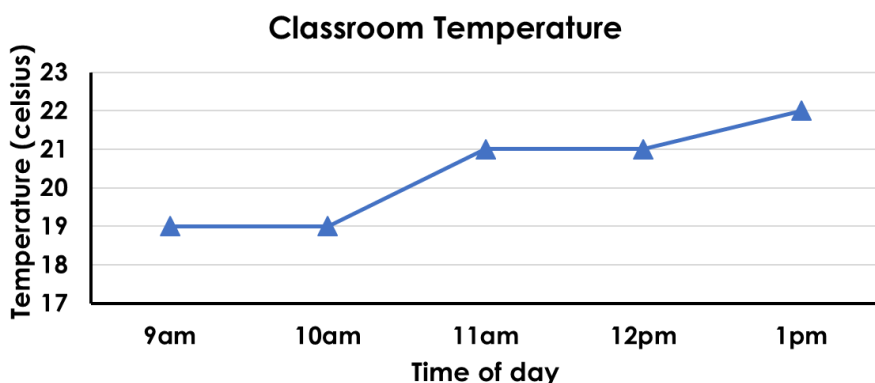| Day | Height |
|---|---|
| Monday | 23cm |
| Tuesday | 25cm |
| Wednesday | 28cm |
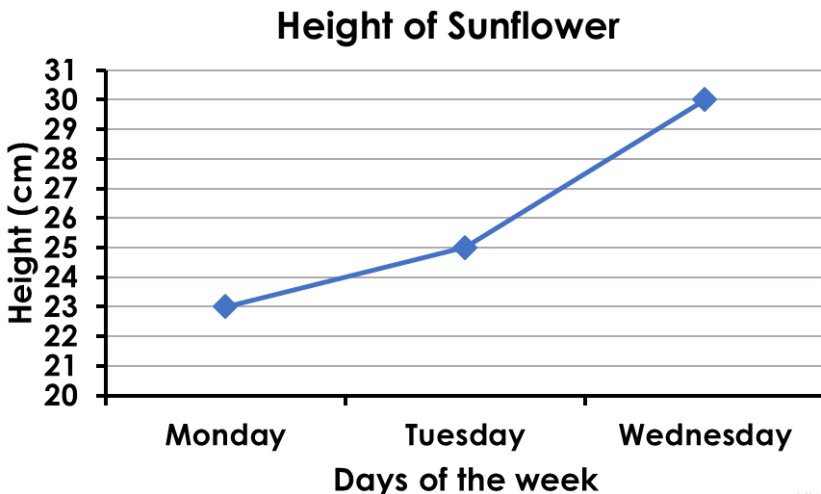
# Introducing Line Graphs

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**4.** Use the information in the line graph about the temperature in a classroom to fill in all the blanks in the table.
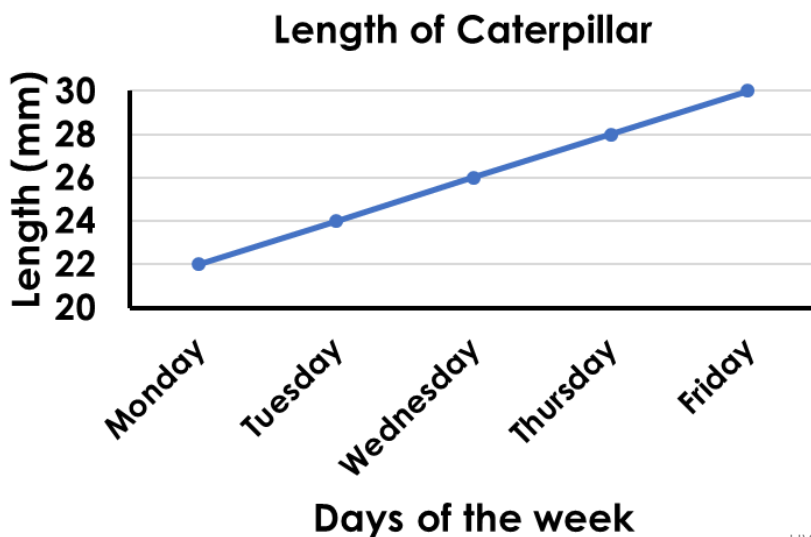
| Time | Temp |
|------|------|
| 9am  |      |
| 10am |      |
| 11am |      |
| 12pm |      |
| 1pm  |      |

**Classroom Temperature**

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**5.** A class are measuring the length of a caterpillar to see how much it grows in a week.
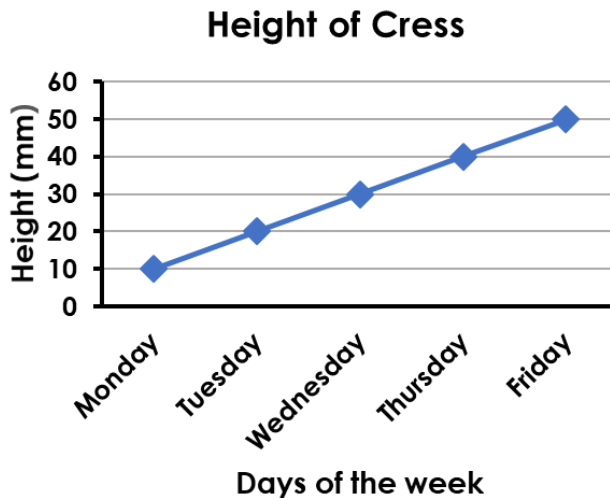
**A.** How long was the caterpillar on Wednesday?

**B.** How much did the caterpillar grow between Monday and Tuesday?

**C.** How much did the caterpillar grow in total from Monday to Friday?

**Length of Caterpillar**



**Days of the week**

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**6.** True or false? The information in this table has been correctly converted into a line graph. Class 4 are growing cress for a science investigation. They record its height each day. Explain your answer.

| Day | Height |
|-----|--------|
| Monday | 10mm |
| Tuesday | 20mm |
| Wednesday | 40mm |
| Thursday | 60mm |
| Friday | 70mm |

**Height of Cress**



**Days of the week**

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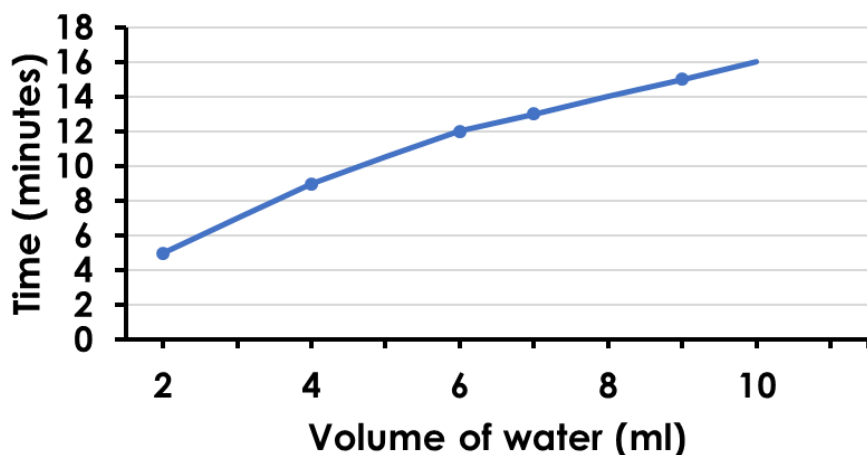**Homework/Extension – Introducing Line Graphs – Year 4 Expected**

# Introducing Line Graphs

**7. Use the information in the line graph about how long it takes a block of ice to melt to fill in all the blanks in the table.**

| Water (ml) | Time (minutes) |
|------------|----------------|
| 2          |                |
| 4          |                |
| 6          |                |
| 7          |                |
| 9          |                |

**Melting Times of Ice Blocks**
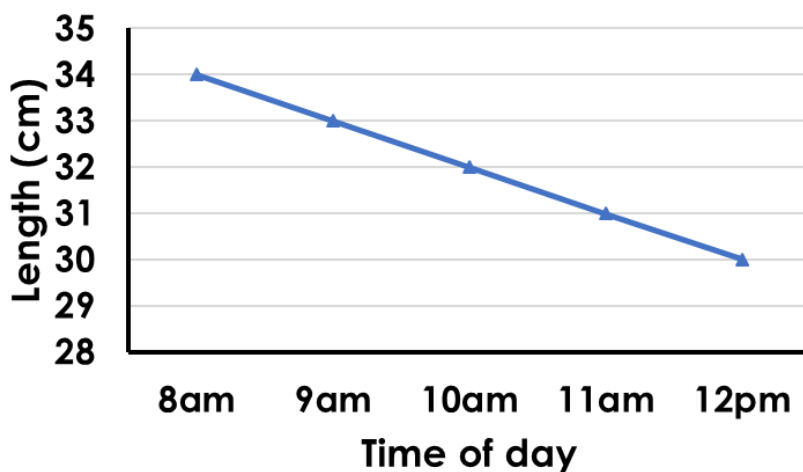
Time (minutes) vs Volume of water (ml)

VF
HW/Ext

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**8. A class are measuring the length of the shadow of a 30cm ruler during a morning.**

A. How long was the shadow at 8.30am?
B. What is the difference between the shortest and longest shadow?
C. At what recorded time was the shadow longest?

**Length of Shadow**

Length (cm) vs Time of day

VF
HW/Ext

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**9. True or false? The information in this table has been correctly converted into a line graph. The data shows how a cross country runner performed during a race. Explain your answer.**

| Distance (km) | Time (minutes) |
|---------------|----------------|
| 3             | 10             |
| 5             | 20             |
| 6             | 30             |
| 8             | 40             |
| 10            | 60             |

**Cross Country Race Performance**

Time (minutes) vs Distance run (km)

RPS
HW/Ext

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Homework/Extension – Introducing Line Graphs – Year 4 Greater Depth

# Homework/Extension
# Introducing Line Graphs

## Developing
1. **1 – 40, 2 – 39, 3 – 38**
2. **A. 136cm, B. 2cm, C. 4cm**
3. **False, the recording for Wednesday is 28cm, not 30cm.**

## Expected
4. **Temperature at 9am = 19°, 10am = 19°, 11am = 21°, 12pm = 21°, 1pm = 22°**
5. **A. 26mm, B. 2mm, C. 8mm**
6. **False, between Tuesday – Wednesday the cress grows 20mm, but the graph shows it only grows 10mm. The same again between Wednesday – Thursday.**

## Greater Depth
7. **2 – 5, 4 – 9, 6 – 12, 7 – 13, 9 – 15**
8. **A. 33.5cm, B. 4cm, C. 8am**
9. **False, it took the runner 10 minutes to run 3km and 20 minutes to run 5km.**