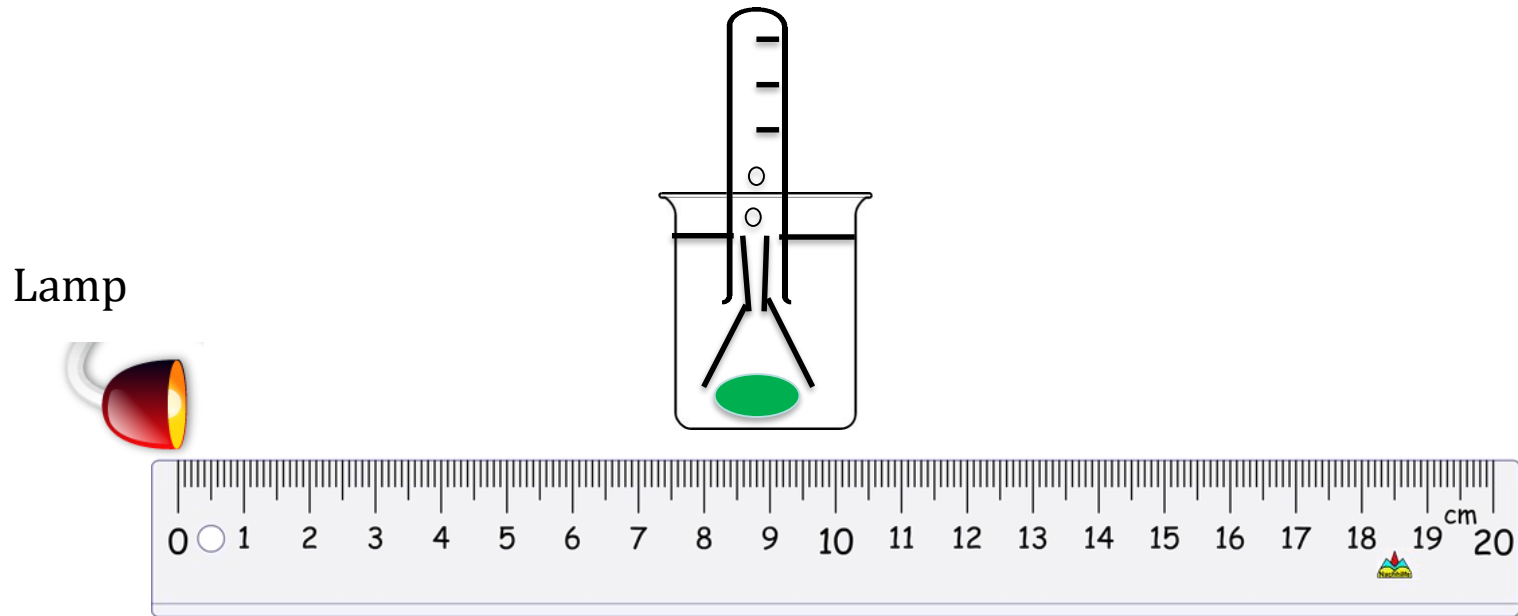


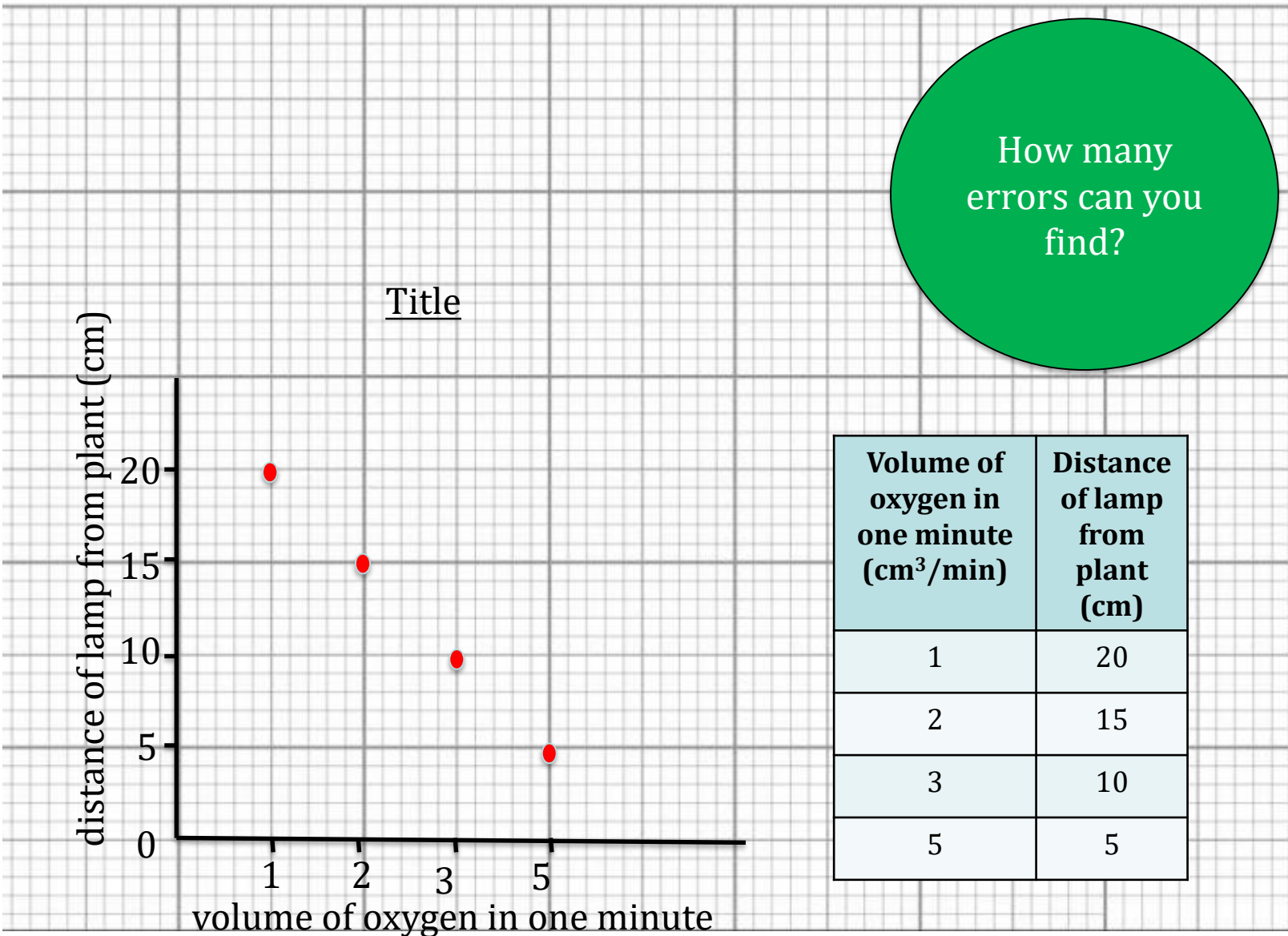
| | | | |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------------------------------------------------|
| Topic | Drawing line graphs | Level | Key Stage 3/GCSE (or any course for students aged 11-16) |
| Outcomes | <ol style="list-style-type: none"> 1. Students identify what is wrong with a line graph 2. Students use a mark scheme to peer assess a line graph they have drawn | | |
| Information for teachers | <p>This activity is great for any lesson involving line graphs. You can share the incorrect graph on slide 3 and ask students to list all the errors. Depending on how good students are at line graphs they could then practice getting the graph right by plotting the data from the table or, they could just use the mark scheme to peer assess a different line graph.</p> <p>The key purpose of the mark scheme is to make sure students are clear on the specific aspects of graph drawing.</p> | | |

How does light intensity affect the rate of photosynthesis?



What is the dependent variable?
What is the independent variable?

How does light intensity affect the rate of photosynthesis?



How many errors did you find?

1. X-axis and y-axis are the wrong way round – always put the dependent variable on the y-axis and the independent variable on the x-axis
2. The x-axis label has no units
3. The graph is too small – ideally a graph must fill $\frac{3}{4}$ of the paper. This makes sure that the relationship is easy to see
4. Scale of x-axis is wrong – a scale must be consistent i.e. each square on the graph paper must be worth the same amount
5. Points should be plotted with an X not a dot. This makes it easier to see the value of each point
6. The title does not allow you to see what the graph is about
7. There is no line of best fit. Remember this can be a curve

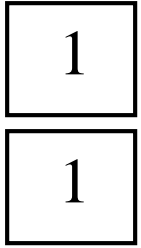
Now, have a go at drawing the perfect line graph using the results in the table.

| Distance of lamp from plant (cm) | Volume of oxygen in one minute (cm ³ /min) |
|----------------------------------|-------------------------------------------------------|
| 5 | 5 |
| 10 | 3 |
| 15 | 2 |
| 20 | 1 |

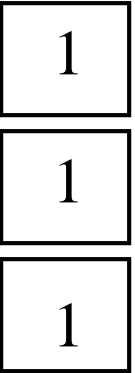
Graph Mark Scheme

- x-axis labelled with correct unit

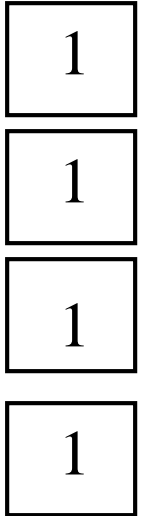
- x-axis labelled with correct unit
- y-axis labelled with correct unit



- x-axis labelled with correct unit
- y-axis labelled with correct unit
- x-axis has a consistent scale



- x-axis labelled with correct unit
- y-axis labelled with correct unit
- x-axis has a consistent scale
- y-axis has a consistent scale



- x-axis labelled with correct unit
- y-axis labelled with correct unit
- x-axis has a consistent scale
- y-axis has a consistent scale
- at least four points correctly plotted

| |
|---|
| 1 |
| 1 |
| 1 |
| 1 |
| 1 |

- x-axis labelled with correct unit
- y axis labelled with correct unit
- x-axis has a consistent scale
- y-axis has a consistent scale
- at least four points correctly plotted
- points plotted with a X and not a dot

| |
|---|
| 1 |
| 1 |
| 1 |
| 1 |
| 1 |
| 1 |

Use the mark scheme to identify what corrections your partner needs to make.

Hand back the graph and help your partner to improve it.