

# Task: Plants Experiment

Approach: Team

Year: 4 & 8

Focus: Exploring growth requirements for plants

Resources: Photo, team instructions, "Working Together" guide, answer sheets



## Questions / instructions:

### Discuss/review "Working Together" Team Guide.

In this activity you will be working as a team to make up an experiment to find out about plants.

Before making up the experiment, write a list of things that help plants to survive and grow. Write your list of things on your "List" answer sheet.

Give students answer sheet. Allow time.

**Working Together in a Team**

**Good Team Members - EVERYONE**

- Help everyone to work together.
- Share ideas with others.
- Explain things to each other.
- Listen to each other.
- Stay on the topic.
- Help each other to get the job done.

**Team Leader - CHOOSE SOMEONE.**  
Makes sure everyone is helping and taking turns.

**Team Recorder**  
**DECIDE TO CHOOSE SOMEONE, OR TO TAKE TURNS.**

- Writes down the team's ideas and decisions.
- Makes sure everyone's ideas are included.
- Writes clearly so that it makes sense.

**Team Reporters**  
**DECIDE TO CHOOSE SOMEONE, OR TO TAKE TURNS.**

- Listen carefully to what others are saying.
- Understand the team's ideas and decisions.
- Report clearly the team's ideas and decisions.

**Plants Experiment Team Answer Sheet (List)**

Things that help plants to survive and grow:

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Now tell me the things that help plants to survive and grow.

Students respond.

	y4	y8
water/rain/humidity	100	100
light/sunlight/shade	95	98
air/oxygen	20	33
carbon dioxide/photosynthesis (chlorophyll)	7	28
suitable growth medium/soil/mulch	92	95
fertiliser/manure/compost/nutrients/minerals	53	76
worms/micro-organisms	21	18
appropriate temperature/seasons	3	9
shelter/support	13	19
adequate space (roots/foilage)	7	13
removal of competitive plants/weeds	7	8
protection from damage by animals (including insect/humans)	13	15
protection from diseases	5	6
helpful insects/birds (removing predators)	8	21
pruning/removal of damaged parts	4	9
reproduction/seeds/pollination/bees	23	18

In your team you are going to design an experiment to find out if plants do or don't need sunlight to stay healthy. Here are the things you are to do.

**Show and read Plants Experiment – Team Instruction card.**

**Show photo.**



**Plants Experiment – Team Instructions**

Think about how you could find out if plants do or don't need sunlight.

You would have lots of healthy plants that are the same. They would all be planted in the same soil, like the ones in this photo.

**On the answer sheet write**

- What you are trying to find out in this experiment
- How to do the experiment
- The equipment needed for the experiment
- What you think the answer will be to the experiment

**Hand out “Experiment” answer sheet. Allow time.**

**Plants Experiment  
Team Answer Sheet (Experiment)**

1. What we are trying to find out in this experiment:  
\_\_\_\_\_
2. How to do the experiment:  
\_\_\_\_\_
3. The equipment needed for the experiment:  
\_\_\_\_\_
4. What we think the answer will be to the experiment:  
\_\_\_\_\_

Talk together in your team and listen to each other's ideas before you start writing them down. Here is your answer sheet.

You've thought about your experiment and have written it down. If another group of students was given your experiment, do you think they would be able to do it by following your instructions? Are your instructions clear enough? Talk about that now, and if you think you need to make some improvements, you can change what you have written down.

**Allow time.**

Thank you for doing that. To finish off, tell me how to do your experiment.

	% responses	
	y4	y8
plants in at least two different levels of light	49	91
two or more plants in each condition (replication)	16	43
Watering: same regularly	4	9
	43	43
similar temperatures	6	13
same time for growth	17	53
long enough period for growth difference to be observed	13	44
examination/measurement procedures for comparing growth in different light conditions	28	47
use of appropriate measuring device	3	9
planning to record results	0	12
suggested repeating experiment with different seeds or plants	0	1
predict that sunlight will be needed for growth health (most plants)	64	85
<b>Total score:</b>	<b>14–28</b>	<b>1</b>
	<b>10–13</b>	<b>16</b>
	<b>7–9</b>	<b>38</b>
	<b>4–6</b>	<b>44</b>
	<b>0–3</b>	<b>1</b>
		<b>0</b>

**Commentary:**

There were not large differences between year 4 and year 8 teams in identifying requirements for plant growth. However, year 8 teams performed distinctly better on some key aspects of experimental design.