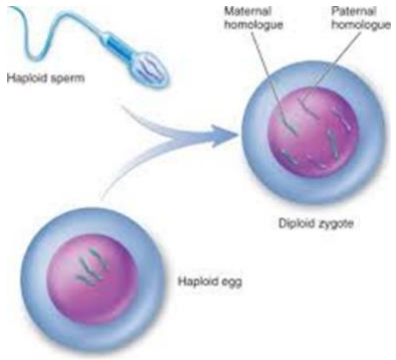
National 5 Biology

St Aidan's High School

OPTIMA PETENDA

Multicellular Organisms

2.3 Reproduction



Name: .....

The effect of temperature on germination

Temperature affects the rate at which seeds germinate. This is because temperature affects the activity of the ENZYMES inside the seed.

The number of seeds that germinated at different temperatures were counted and recorded in the table below:

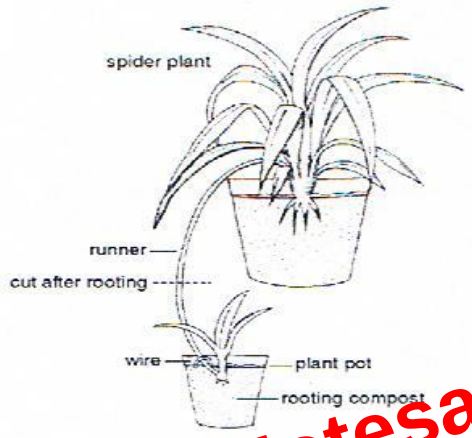
Temperature (°C)	0	5	10	15	20	25	30	35	40	45	50
No. of seeds planted	20	20	25	18	20	22	21	25	20	20	19
No. of seeds germinated	0	2	5	8	12	17	16	13	5	0	0
% of seeds germinated											

We need to convert these results into "**percentage of seeds that germinated**" because the same number of seeds, <u>were not</u> planted at each temperature. Converting them into a percentage allows us to accurately **compare** the results.

These results show that as temperature INCREASES the percentage of seeds that germinate INCREASE until the temperature reaches an OPTIMUM of 25°C.
At temperatures above this, enzymes will start to be DENATURED and the percentage of seeds that germinated decreased.

Activity 2.8A - Production of plantlets from runners

In the case of Spider Plant *(Chlorophytum)* and Mother of Thousands*(Saxifraga sarmentosa)* the plantlet forms at the end of a **runner** (a horizontal stem). The plantlet can be 'pegged down' into a small pot of compost using wire. When roots are established, the runner is cut close to the new plant and the wire removed. Strawberry plants can also be propagated by this method.



Materials required by each group/student

Stock plants with 'runners' bearing plantlets e.g. Spider Plant *(Chlorophytum)*, Mother of Thousands *(Saxifraga sarmentosa)*, rooting compost, 10cm plant pot, 10cm lengths of nichrome wire, plant labels.

Instructions

Propagating Spider Plant *(Chlorophytum)* or Mother of Thousands *(Saxifraga sarmentosa)* by 'pegging down'runners.

1. Collect all of the equipment and a plant with 'runners' bearing plantlets e.g. Spider Plant or Mother of Thousands
2. Select a 10cm pot and fill with rooting compost to 1cm below the rim.
3. Bend the length of wire to form a 'u' shape.