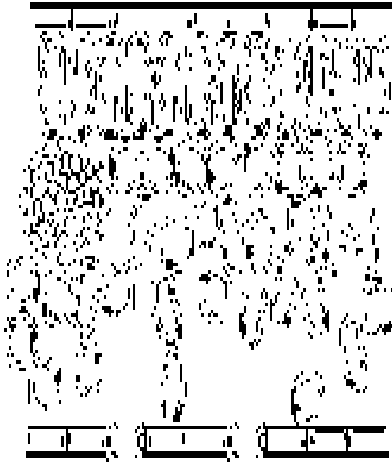


## Activity 002cc: Variety of Life

### Variety of life

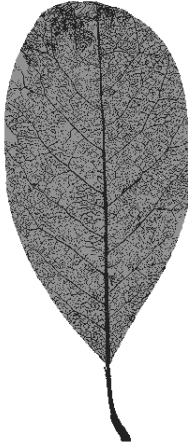
1. The following plants are trees but live in different climate conditions in the world. Your task is to look at all the evidence about them and decide with reasons the climate in which they live. (Pictures have nothing to do with drawings)

#### Plant A. *Welwitschia mirabilis* plants:



- Has an iron hard woody stem.
  - This stem is about 0.75 metres above the ground and a further 2.7 metres under ground. The stem is 1.5 metres in diameter.
  - It grows two to five long green leaves.
  - These leaves sprout from the stem growing at a rate of 15 centimetres a year and can be up to 9 metres long.
  - In the strong winds that blow the leaves writhe on the ground where fine particles of rock cause the leaves to tear. The torn leaf ends get tangled into a ball covering approximately 20 square metres.
  - From the stem grows a single root that goes down many metres. This root can store both food and water over long periods.
- The plants can be male or female and bear different types of cones that form seeds.
  - The seeds can wait up to five years before germinating. Unlike other plants the first growing leaves or cotyledons can last for up to five years.

#### Plant B. *Rhizophora* plants:



- Have long slender woody stems that grow tall.
- On the top are branches that grow out and up like a normal tree. The lower branches grow out and down without leaves. They act as stabilisers for the long slender stem.
- The top branches produce many small rounded evergreen leaves that form an impenetrable forest.
- The lower branches and roots form a scaffold or web of wood, which acts as a safe habitat for coelenterates, molluscs, crustaceans and other water life.
- Fruits are produced on the upper branches and seeds form inside the fruits. In the damp atmosphere of the fruit the seeds germinate and produce a single root that grows downwards for 25 centimetres. When the seed is ready it detaches from the tree and falls root downwards. The root spears the underlying surface and the root supports the seed that then continues to grow into an adult plant.

### Extension Work

2. Draw a diagram of either plant A and B labelling all the plant organs you can.
3. Each plant has leaves but they are different in shape and structure. Decide what the important features of a leaf on your plant should be. Then using the information you have draw the possible leaf shape of one of the plants A or B
4. Explain the possible adaptations of each plant, A or B to their environment. How might the cells and their organisation have adapted to these different environments?
5. Explain why you think the two seeds have such strange germinating styles.