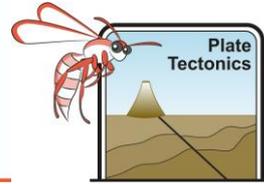
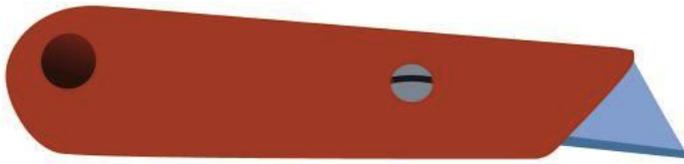


# Seafloor Model - Teacher Notes



## Evidence for seafloor spreading (Divergent plate boundary)

Where magma comes to the surface along mid-oceanic ridges the youngest rocks will be closest to the ridge and their age will increase as you move further away. Students are asked to create a simple model that replicates what happens when seafloor spreads and how that affects rock ages across the mid-oceanic ridge.



If the class is excitable it may be advisable to cut the side from the boxes and the three slits beforehand. Some students will need direction on how to use a “Stanley” or craft knife safely.

Cuts should not be made towards or close to the body

The blade should always be kept inside the haft when not in use.

The blade should never be used as a lever.

Materials per student or group

- A box large enough to get both hands inside (The boxes photocopy paper is delivered in are good however shoe boxes or tissue boxes can also be used)
- A Stanley knife or equivalent
- Two strips of paper about 50 cm long and 3cm wide. These can be cut from plain white or scrap paper. I used an old elastic bandage
- A stapler and sticky tape
- Four different coloured felt tip pens.

## AIM To model seafloor spreading

### METHOD

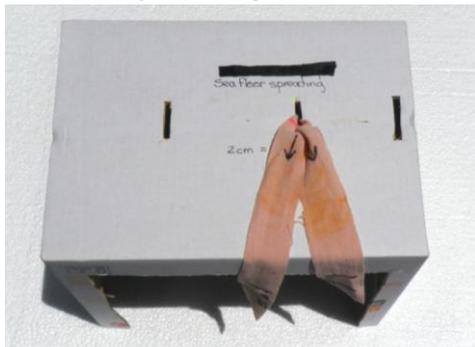
Carefully remove one side of the box to permit access for your hands. If a margin is left around the gap the box will be stronger.

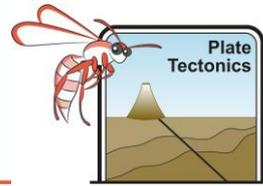
Cut three thin slits in the top of the box just a little wider than your strips of paper or other material (as per the photograph below).

Lead each strip down the central slit and down the slit near the edge.

Staple or stick each strip below to form two separate circular loops.

Ensure the joins hang well below the ocean floor.



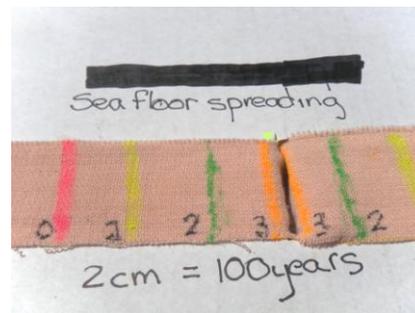
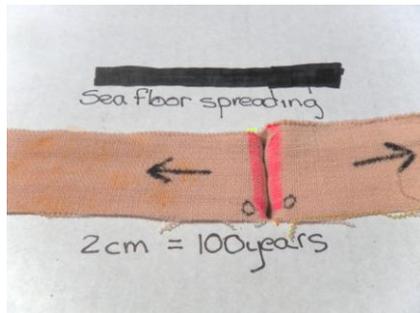


## Seafloor Model - Teacher Notes

The top of the box represents the ocean floor.

The central slit represents the mid-oceanic ridge where magma wells to the surface.

Pulling downward on the outer edge of each loop will cause material to rise from the ridge and spread.



Run the first felt tip pen down the central slit until a coloured band appears on both strips. Label this "zero".

Pull downwards on the outer edge of both loops until 2cm of tape has "erupted" on either side of the ridge.

Run the second felt tip pen down the central slit and label these 100 years on the strips.

Repeat moving the loops until all four colours have been used.

Draw a cartoon below of what happens each 100 years. Label the mid-ocean ridge and direction of movement.

0 years	100 years	200 years	300 years	400 years

Describe the banding of the strips on either side of the mid-ocean ridge.

The banding on either side is a mirror image with the youngest rocks close to the ridge and aging away from it.

After 100 years, how much wider is the sea floor? 4cm

Does this activity model real seafloor spreading?

Yes it does as the crust is widened by each outpouring of molten rock from the mid ocean ridge

Is the ridge a zone of convergence (coming together) or divergence (moving apart)?

Divergence

Can we say **new** material is created at the ridge?

No because although it is newly crystallised rock, it is made from materials which have been recycled from elsewhere. Nothing is created or destroyed.