

Activity Instructions

The following items will be needed for this activity:

per group:

- game board and timeline
- set of mutation cards
- die
- materials for creating species (*see Prep Instructions*)



Figure 1

Step 1

Using two different colours of plasticine, have students create their ancestral population, which will be an individual comprised of a backbone and a head. Have the students add eyes. This will be the first game piece. Place the game piece on the "Common Ancestor" square (**figure 1**) and roll the die to move down the game board. A new game piece must be created each time the die is rolled to ensure that there will be a visual representation of the evolutionary history of the different lineages at the end of the activity.

Step 2

Follow the instructions for each game board square. Remember that a new game piece must be created for each roll of the die, including turns that land on blank game board squares.

STOP! and speciate: no matter what number has been rolled, the student must stop on this square (**figure 2**), pick up the **STOP! and speciate** card and follow the instructions.

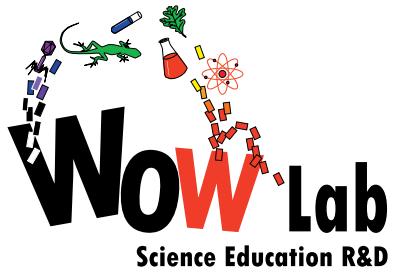
Mutation: select a mutation card corresponding to the environment of the square the game piece is on and add the indicated mutation to the game piece.

Speciation: make two identical species (the same as the species on the previous game board square) and then select a mutation card for the lineage on the right hand side of the game board square and add the indicated mutation.

Lose 1 trait: remove one trait from the population. However, do not remove the legs for the land species, the wings for the air species or pectoral fins for the water species.



Figure 2



Extinction: the population has gone extinct and will not go any further than this square. Create the game piece, then turn it on its side.

Step 3

As new species are created, ensure that the dimensions of the body and head stay the same (unless a mutation card for changing the size of the body or head is chosen).

Step 4

Assign a role to each student in the group. One student can roll the die and choose the mutation cards; two or three students may be in charge of creating the new species; one student, the "group leader", can keep track of the changes in each lineage by writing them down and refer to the activity rules and instructions as necessary.

Step 5

As speciation events occur, there will be several different lineages on the game board. Ensure that the group leader is aware of the specific mutations or events for each lineage. It may be helpful to number lineages that arise from speciation events within an environment. For example, students can denote two species within the land environment as Land Species 1 and Land Species 2.

Step 6

The end of the game board represents the present day. There will be a visible record of the ancestral history of each surviving lineage.