

Daily Lesson Plan Template

Lesson Title: We are NOT the SAME

Overview

This lesson and activity are intended to show students how the variation we observe in sexual reproduction happens. It will go over the mechanisms of crossing over and random assortment.

Process Standards

Focus on the development of explanatory models based on their observations during laboratory investigations. Use analogies and models to simplify and represent scale or complexity. Recognize the limitations of analogies and models.

Content Standards

B.b.5

Essential Questions

Why do children from the same family look different from one another? What might be the evolutionary advantage of this differentiation?

Objectives

Explain the mechanisms behind variation of offspring in a single family. Students will be able to model crossing over and random assortment and predict problems that may arise during these processes.

Co-Teaching Model

Student will be broken into two groups to make the explanation process more simple for the teachers. These groups will be led by the teacher in the activity. The students will be expected to discuss what they are doing.

Procedures

Describe your procedures for each of the following:

Preparation needs (lab or presentation materials, etc.)

The clay or playdough needs to be purchased for the activity, enough so that each student can make four small chromosomes. The slides explaining both concepts will also have to be prepared before the class.

ENGAGE/Introducing the lesson (Describe how you will engage students in the lesson, assess prior knowledge, or present the question/problem/challenge for the day)

I am going to ask the students if they look exactly like their brothers and sisters. After this question I will ask them why they think this difference exists.

Student instructions for students

Each student will create 4 chromosomes. One set of the two sets will be made of the same color material. The other set has one of each color. Both sets will do crossing

over and random assortment. After this the students will be asked to explain the differences between the two sets.

Activities or teacher presentations (Procedures/Plans)

During the creation of the chromosomes the teachers will outline the two processes being taught that day to explain to the children what they are to be doing to the chromosomes. Facilitation of the crossing over of chromosomes for those who are struggling is the other procedure happening during this time.

Productive Questions you anticipate using

Why might crossing over happen? What does it do? How is the end product different or not?

How/when will you assess learning?

In the beginning the discussion of how we come to be different than our other siblings will assess what the students already know on the topic. As the activity proceeds their ability to do the two processes will depend on their prior understanding and the teacher's lesson. Their progress will show how well they understand the material.

Closure: concept recap, preview, assignment

Show a short clip of the real time process of crossing over and assortment and ask the students to compare this to asexual reproduction.

Resources/Materials

Slides on crossing over and assortment with some accompanying pictures and a video example all need to be prepared before class. The raw materials for the construction of the chromosomes needs to be purchased ahead of time. A handout showing an example of the two processes will need to be prepared and printed ahead of time.

Assessment/Evaluation

The initial assessments are informal assessments being made during discussion before the lesson has been started, during while they are doing the activity, and at the end when they are given a worksheet with different examples of chromosomes and asked to show the processes learned during the activity and their resulting chromosomes.