

Stage 1 – Desired Results

ACOS standards (lesson goals):

12. Develop and use a model to analyze the structure of chromosomes and how new genetic combinations occur through the process of meiosis.

a. Analyze data to draw conclusions about genetic disorders caused by errors in meiosis (e.g., Down syndrome, Turner syndrome).

Understandings (Students will *understand*...):

Students will understand body processes and ways malfunctions in these processes can potentially cause disorders.

Essential Knowledge (Students will *know*...):

Structure of a chromosome

Process of meiosis

Relationship meiosis has to genetic disorders

Essential Skills (Students will *be able to*...):

Determine cause and effect of malfunctions

Critical thinking about connections between chromosomes

Creativity- creatively find way to present material

Essential Question(s):

How does the process of cell division connect to genetic disorders?

How does meiosis differ from mitosis?

How can errors in other body processes lead to disorders the way errors in meiosis lead to genetic disorders?

Stage 2 – Assessment Evidence

Assessment Evidence:

- **Formative assessments:** - KWL chart about meiosis, kahoot activity
- **Summative assessments:** - There is not a summative assessment in today's lesson.

Stage 3 – Learning Plan (Include approximate time for each activity in the learning plan)

Materials needed for the lesson: Printer paper, colored pencils, crayons, markers, computers for student use, textbooks, and stapler.

Bell ringer:

- **Description of activity:** Students will come in and have a paper on their desk describing meiosis and each phase of this process. I will personally write the definitions of these stages and put them into terms the students will understand. There will be an assignment projected on the board that instructs the students to carefully read each explanation of the stage and draw on a separate piece of paper what they think the chromosomes look like in each stage. There will also be a note on the instructions that says that the

information they read will be used later in the lesson so they need to read each description and comprehend what it is saying.

- **Approx. time required:** 5 minutes

Review of relevant, previously learned information (should be an activity):

- **Description of activity:** KWL chart about meiosis. Students will write down everything they know about chromosomes and the processes of mitosis and meiosis. Even though my lesson is not on mitosis, the students will be able to relate the new process they are learning to one previously learned. They will also write down what they want to know about chromosomes or the two processes. After 5 minutes is over, the students will be asked to put their KWL charts and bell ringer information sheets away in their binders.
- **Approx. time required:** (5 minutes for activity and 1 minute transition time to put away papers)

Introductory Activity (should be an activity):

- **Description of activity:** Students will get out personal electronic devices and go to <http://kahoot.it>. They will enter the game pin that I supply. This kahoot will ask questions about the information included in the worksheet from earlier in the class to see if the students understood the information they read. There will be 10 multiple choice questions included in this activity and students will have 20 seconds to answer each question. There will be no discussion on the correct or incorrect answers during introduction. This is only to gauge what percentage of students understand the broad concept of each stage.
- **Approx. time required: 6 minutes (There will be no transition time required to go into the body because it is a continuation of the introduction)**

Body of the lesson (thoroughly describe all aspects of the lesson):

- **Description of activity:** Following the completion of the kahoot activity, I will bring up a copy of the questions I asked during the introduction. This is when there will be a class discussion on each question so that students will have an understanding of the topic before we begin our project. The questions that I asked in the kahoot were all about vital information that the students HAVE to understand before we can move any further. I will have the students to explain the reasoning behind the answer being correct or incorrect so that the other students can hear it explained differently than I did. **(12 minutes and 2 minutes to read info for groups on board and break into groups. The students will be told to bring all of their belongings because they will remain in these groups for the duration of class.)**
- After the discussion is over students will get in to groups of three that I have already assigned and will have projected on the board. In each group, students will have two terms that deal with meiosis. These words include: gamete, trisomy, chromatin, haploid, diploid, homologous, Down syndrome, Turner's syndrome and also the each stage of meiosis. With this project, each group member will have a role that will be typed beside their name with a description of their job. These roles will include: a researcher, note taker, and designer. The researcher will look up definitions of the terms and when the two syndromes are being researched, this part will also include what stage the abnormality of meiosis occurred in. The note taker will work closely with the researcher and write down the information that is found. The designer will draw pictures of each stage/term while the note taker and researchers are finding the information. They are also responsible for creating the presentation for the group after the information is found. This presentation can either be a Prezi or any other form of presentation that the designer wants to use that is not in the form of a PowerPoint. Each member of the group will be actively involved in the creation of the presentation, but the designer will be the one responsible for controlling the technology used to make the presentation. **(20 minutes)**
- **Approx. time required: 34 minutes**

Preview of the next lesson:

- **Description of activity:** Discuss that during the next class meeting each group of students will present their information to the class and each student will be asked a question regarding the information they learned by taking on their particular role in the group.
- **Approx. time required:** 5 minutes (This includes that time it will take me to explain the out of class assignment.)

Teacher Candidate Name: Jessica Daily
Daily Lesson Plan Title: The Process of Meiosis
Date: September 1, 2016

3

Related out of class assignment: Complete the L column of the KWL chart that was created at the beginning of class. Tell students to include everything they learned about their terms and about the stages of meiosis. Also, encourage students to go over the information they will be presenting during the next class.

Optional description of co-teaching strategy used in this lesson. If co-teaching was part of this lesson, describe: co-teaching model used, how and why this particular strategy was employed, role (lead teacher/secondary teacher), and details of the implementation of the co-teaching model.