Meiosis, cell division and the appearance of genetic disorders

Overview: This project is intended to be a fun way for students to learn the many steps involved in creating our 'sex cells', also called our gametes (Sperm and Egg). The inner workings of the cell are quite dynamic and involve copying of genes, 'crossing over', pulling chromosomes, apart, etc.

The students then, either working individually or in small groups (no more than four) will put together a short, 2-5 minute animated video showing not only the steps of mitosis, but also folding in layers of creativity. This may be in how they construct their story line (perhaps opening with a news segment in which the students are news-casters discussing the latest developments in science).. or perhaps by creating fictional little characters that interact with the components of the cell (the video Foil on Clark's website illustrates this).. Students may use any materials they can find, Lego's rocks, strips of yarn, or draw materials using colored pencils and paper).

Also, the students are tasked with identifying a genetic disease or mutation describing both the outcome of that mutation and what science is saying about how it happens and if there are any cures on the horizon.

Fundamentally, the students will attempt to capture in their video, the content described on pages 231-241 of their text book. The student should avoid including paragraphs of text in their videos but short, bold Key Terms (such as Anaphase I) should definitely be incorporated into their story boards.

Day 1 objective. By the end of the period. ***Submit to Clark***, a document showing who will be in the group, what the first thoughts are for use of materials and what the first thoughts are for a story line.

Day 2 Objective: Have the software downloaded onto a group members cell phone and start your first attempts at capturing stop motion video.

Note: This project will span approximately three weeks. Students will be given a portion of each block period (sometimes more, sometimes less) to work on this project. The final video project will be due on Thurs/Friday April 3/4th. (work submitted afterwards will be docked by 10% per week).

Grading Rubric:

Students completed the stated goals	5	4	3	2	1	0
Students accurately described the science	5	4	3	2	1	0
Students incorporated all relevant terms and ideas	5	4	3	2	1	0
Students utilized creativity in their presentation	5	4	3	2	1	0
Students created a smooth flow of ideas	5	4	3	2	1	0

- 5 = students really impressed Clark and went above and beyond the stated goal
- 4 = students did a pretty good job.. (like taking 2nd place at the track meet) but not as impressive as a 5
- 3 = the student understood the direction and did a 'minimal effort' to accomplish the assignment.
- 2 = Student work demonstrates some understanding of the assignment but the product is lacking in several areas
- 1 = items are entirely missing or so far from the stated goal that they basically aren't there.

Note; Scoring all 4's = 88% = B=. In order to earn an A, you must score a 5 in at least ONE category.