**Asexual Reproduction**

**Leader: Timer:**

**Recall from Grade 8 (and so far in grade 9)**

Give another word for organism \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What do we call organisms that are only one cell large? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The cell cycle helps us \_\_\_\_\_\_\_\_cells and \_\_\_\_\_\_\_\_\_ cells.

Do you think a cell cycle could make an entire organism? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Think of your answer to the first question on this page.

Give two synonyms for the word “offspring”\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The cell theory states that

* All living things are made of one or more \_\_\_\_\_\_\_\_\_\_\_\_\_.
* A cell is the functional (basic) unit of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* All cells come from pre-existing \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

*(individually first then share answers. Check any that are unclear with the teacher).*

**Reproducing Entire Organisms**

The cell cycle is essential for the growth and repair of cells in our body. Mitosis is the name we give the process of reproduction of single cells. What about reproducing an entire organism? How does THAT happen???????

**Asexual vs Sexual Reproduction**

Entire living organisms can reproduce their entire selves either

1. sexually using genetically different sex cells made by a process called meiosis (we will study this process soon)
2. asexually (using identical body cells made by mitosis)

**Share with the group your thoughts on being able to “clone” humans. To be clear, what if we could have two identical copies of the people in your group?**

*(no more than 5 minutes please)*

**Asexual Reproduction Makes Identical Offspring**

In **asexual reproduction**, a single organism generates an offspring with identical characteristics. The offspring is identical to the parent since there is only one parent from which the organism can gain its genetic information. You could say the new organism is a “CLONE” of the parent organism. Have you heard of “clones” in movies or video games or in other experiences? **Share** them with your group

*(no more than 3-4 minutes please)*

It’s not easy to reproduce an entire organism. It is easier to reproduce yourself if you are only one cell large. Most single-celled organisms (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) reproduce asexually.

Humans, for example, cannot reproduce asexually (ie we cannot make clones of ourselves, or at least not that we know of).

**Can Some Organisms Reproduce Sexually OR Asexually?**

Yes!! Some organisms are capable of reproducing asexually and sexually. The **conditions** determining which type of reproduction is to take place are often **environmental**. By “environmental conditions”, we mean the temperature, the water available, the amount of sunlight available; all of the abiotic and biotic factors that allow the organism to be successful.

**When Will These Organisms Reproduce Sexually?**

If the **environmental conditions are great** (plenty of food, just the right amount of sunlight, just the right amount of water) the organism may spend its time looking for a mate and creating a new organism using sex cells.

**When Will These Organisms Reproduce Sexually?**

If the **environmental conditions are NOT great** (not enough food, too much/too little sunlight, not enough/too much water) the organism may need to reproduce quickly – especially if it is dying – and it may reproduce by “cloning” itself: producing another organism by asexual reproduction.

Suppose we go to the doctor because we are ill (sick). We get some antibiotics to help our immune system “fight” the bacteria. According to the online video (Karl Klose), why is it important to take ALL of the antibiotic? That is, why do we need to kill ALL of the bacteria when we are ill? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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