Reproduction!

Instructions – Part 1

Organism A

1. Use the coin provided to determine your organisms I.D. number. Flip your coin once to determine your first digit, then flip again to determine your second.
    - Heads = 1
    - Tails = 2
2. In this part of the activity you will go through 10 years. Each year you will **double** your population size and all your offspring will have the **same I.D. number** as you.
3. Read the **READING PASSAGE** below and then answer the questions for Organism A.

Organism B

1. Roll the dice twice to determine your I.D. number for this part and put it in the space provided on your student sheet. Example: If you roll and 2 and then roll a 5, your number would be 25
2. Next, you can start producing offspring. BUT WAIT! In order to produce offspring you will need a **partner** so first find one. Then get one coin, **ONLY ONE per group**.
3. Once you have a partner use this process to produce offspring for 10 years.
    i. First, write your two I.D. numbers in the "parent" circle, one per circle.
    ii. Second, flip your coin to determine which digit you will pass on. If it is heads, write your **first digit** in the offspring circle, if it is tails write your **second digit**.
        a. **EXAMPLE** if your I.D. number is 25 and you flip a tails you would put a "5" in the offspring circle.
    iii. Then your partner will flip the coin to determine what digit they will pass on.
4. Finally, calculate the size of your population at the end of the 10 years (do not add together your I.D. numbers and answer the questions for Organism B.

READING PASSAGE

Reproduction is necessary for the continuation of a species. Low reproduction can lead to a species going extinct (something we talked about previously).All organisms reproduce either sexually or asexually. In **Asexual reproduction** all of the genetic information comes from one parent. Offspring are identical to the parent. In asexual reproduction there is no genetic variation because each offspring is exactly like the parent.

In **Sexual reproduction** a new organism begins to form when an egg and sperm join in a process called fertilization. An offspring that is the result of sexual reproduction receives half of the chromosomes from one parent and half from another. No matter what type of organism, if it reproduces sexually, the resulting offspring will be a genetic 50/50 mix of chromosomes from the two parents.

Reproduction! (Student Sheet)

Name _____

Pre-Questions:

1. Why is reproduction important? _____

   _____

2. How many types of reproduction do you think there are? _____

STOP!

Flip this page over, read the instructions on the instruction sheet and follow them. Then return here to complete the graph and questions.

3. What will the offspring be like for…
   1. Sexual Reproduction

   2. Asexual Reproduction

4. What type of reproduction do you think humans use? _____
5. Use the space below to make **double line graph** of your population size over these 10 years. Make sure to include all parts of graph, including a Key since there are two lines.

Organism A

Your I.D. Number _____

Year	I.D. Number	Population size
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

WAIT!! Have you read the passage yet???

1. What was your final population size?

   _____

2. How many different I.D. numbers did your offspring have?

   _____

3. Which type of reproduction do you think this Organism is using? **WHY?**

   _____

   _____

   _____

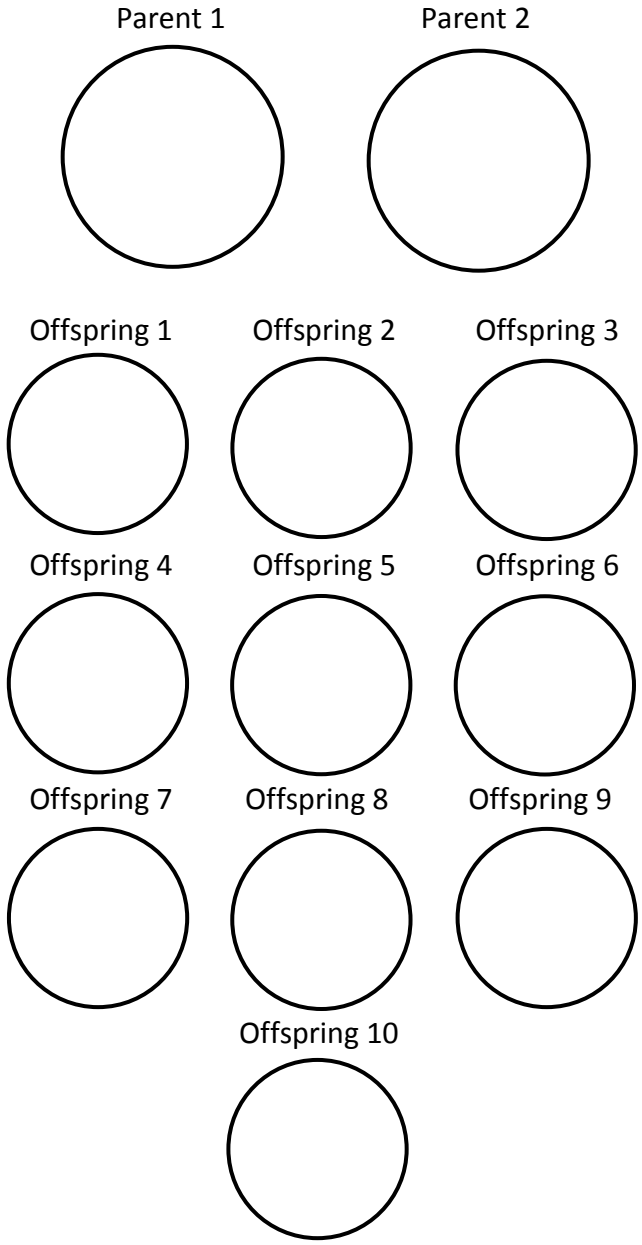
   _____

   _____

Organism B

Your I.D. Number _____

Partners I.D. Number _____



1. What was your final population size?

   _____

2. How many different I.D. numbers did your offspring have?

   _____

3. What type of reproduction do you think this organism is using?

   _____

Reproduction! (Student Sheet – Page 2)

Pre-Questions:

- What is the advantage that Organism A has over Organism B?

  _____

  _____

  a. Can you think of any advantage Organism B has over A?

     _____

     _____

Class Time!

Work with the class and pay attention to fill in the chart below.

	Organism A		Organism B	
	Total Population	Different I.D.'s	Total Population	Different I.D.'s
Before Disaster				
After Disaster				
Percent Lost				

Post-Questions:

	Asexual Reproduction	Sexual Reproduction
Pros		
Cons		

Asexual vs. Sexual Reproduction - Notes

Asexual Reproduction

- Requires only _____
- Offspring have 100% the same chromosomes as the parent.
    - In other words, the offspring are _____ of the parent.
- Types of Asexual Reproduction
    - Binary Fission
        - Bacteria
    - Plant cuttings
    - Fragmention
        - Flat worms

Sexual Reproduction

- Requires two parents that each give _____ to the offspring
- Offspring share the characteristics of each parents
- Happens 2 ways

1. _____
    I. The egg is fertilized by sperm inside the female
    II. Mammals, birds, reptiles, insects, spiders

2. _____
    I. The egg is fertilized by sperm outside the female
    II. The female lays the eggs and then the male fertilizes them.
    III. Fish and some amphibians, Plants and fungi (pollen and spores)

- **Plant Kingdom**
    - Flowers are the reproductive organs of plants.
    - Some flowers have both male and female reproductive organs on the same flower.