

Intermediate Math Lesson Plan for African Dinosaur Exhibit

PURPOSE:

Students will use mean, median, and mode to find the average height and lengths of the African Dinosaurs.

ILLINOIS STATE LEARNING STANDARDS:

6.A.2—Compare and order whole numbers, fractions and decimals using concrete materials, drawings, and math symbols.

6.B.2—Solve 1 and 2 step problems involving whole numbers, fractions and decimals using addition, subtraction, multiplication and division.

ASSESSMENT:

Students will be assessed on the accuracy of their average computations and their work showing how they arrived at the answer.

MODIFICATINONS—DIFFERENTIATION:

Students could be assigned the task of finding only one of the types of averages such as the mean, median, or the mode depending on the individual needs and abilities of the student.

STRATEGIES TO PRESENT NEW CONCEPTS/INFORMATION:

The strategies used to present this concept will include direct instruction, guided practice, and graphic organizers.

MATERIALS:

Each student will need a “Calculating Averages” worksheet, a pen or pencil, a calculator, and access to African dinosaur data.

OPENING:

The teacher will begin by asking students what they think average means. The teacher will establish the average is the typical, ordinary, or common characteristic for a group of things. The teacher will then give the following examples: What do you think is the average number of hours a 5th grader watches television in one day? 2 hours, or 10 hours? 2 hours is a more logical average. Emphasize maybe some 5th graders do watch 10 hours a day, and some watch zero hours a day, but the **typical** 5th grader watches 2 hours a day.

PROCEDURE:

Explain the three types of averages—mean, median, and mode. Demonstrate each with the height of the dinosaurs at the African Dinosaur exhibit (see “Calculating Averages” worksheet). Students then practice by finding the averages for the dinosaurs’ lengths.

CLOSURE:

Sometimes people choose either the mean, median, or mode as the average they want you to see so you will believe their point-of-view. For example, if someone wanted to convince you that the dinosaurs are not that long, which would they say was the average length? The mean, median, or mode? Why?

EXTENSION:

Have students calculate their average age of origin using numbers in millions.

Calculating Averages Worksheet

1. What is the average height of the African Dinosaurs?
 - a. What is the **mean** average? Add all the heights together, and divide the sum by the total number of dinosaurs.

$8\text{ft} + 27\text{ft} + 8\text{ft} + 70\text{ft} + 33\text{ft} + 12\text{ft} + 8\text{ft} = 166\text{ft}$ divided by 7 dinosaurs, so the mean average is **23.71 ft**.

- b. Mode is the number that appears most often. What is the mode average height?

8ft, 27ft, **8ft**, 70ft, 33ft, 12ft, **8ft** so the mode average is **8ft**.

- c. Median is the middle number when the numbers are in order from least to greatest. What is the median average height?

8ft, 8ft, 8ft, **12ft**, 27ft, 33ft, 70ft, so the median is **12ft**.

2. What is the average length of the dinosaurs?

- a. What is the mean average length?

- b. What is the mode average length?

- c. What is the median average length?