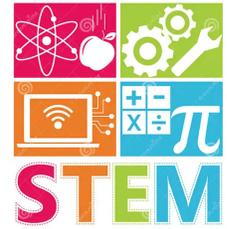


SCIENCE Newsletter

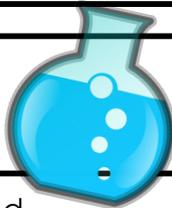
Week of : Sept. 4th to 8th, 2023



4A,B,C,D,E Home Learning

	4A,B,C,D,E Home Learning
Monday	NO SCHOOL - Labor Day
Tuesday	Read "Jake and Anna's Science Projects" and answer practice questions on pages 3-4
Wednesday	Answer Practice Questions on pages 3-4
Thursday	Complete the Making the Science Connections on page 5
Friday	Complete pages 6-7 ***Homework is due Monday 9-11

Vocabulary



Scientific method
Investigation
Research
Data
Infer
Problem statement
Hypothesis
Variables
Independent variable
Dependent variable
Control group
Procedures
Materials
Trials
Results
Conclusion
Application
Abstract
Bibliography

Reminders



- **Homework is due on Monday 09/11.** You can either upload on Archie or print and hand it over.
- **Scientific Method Quiz Friday 09/08**
- **Science Club Applications Due Monday 09/11**

Jake and Anna's Science Projects

It was science fair time again and Jake and Anna both decided to compete in this year's fair. Anna had won first place in the science fair for the past 5 years. Jake had never competed in the science fair before but he was excited about participating for the first time. They both wanted to win.

"I'm not going to tell you what my science project is about," Jake told Anna. "But I'll bet I'm going to win."

Anna had decided that she was not going to work so hard on her project this year so that somebody else could finally win, but now she was more determined than ever to win the science fair. Anna marched off to the library to get started. This year's project had to be the best one ever.

Two weeks went by and everybody in the class turned in their problem statements. Mr. Matthews asked each student to stand up and read their problem statement aloud. Everybody shared their problem statement except Jake and Anna. Mr. Matthews was very disappointed and shook his head.

"You two are going to get low grades for class participation if you do not read your problem statements," warned Mr. Matthews.

Both Jake and Anna were hesitant, but they both stood up and recited their problem statements, **simultaneously**. "Is reaction time faster in boys or girls?"

Everybody was in shock. Even Mr. Matthews was surprised. Jake and Anna had the exact same problem statement!

Afterschool, Jake and Anna bumped into each other. "My project is still going to win," declared Jake.

Anna walked away. She was upset with herself for allowing Jake to share in her project idea.

The next day Mr. Matthews told his students they had to stand up and say what their independent and dependent variables were. "This is worth two grades," he said eyeing Jake and Anna.

Jake volunteered to be the first presenter. He explained to the class that his dependent variables were the reaction times of catching a ruler as it dropped. He had only one independent variable, but before Jake could say what it was, Anna stood up in dismay.

"You stole my dependent variables!" Anna shouted and the two began to bicker back and forth.

Mr. Matthews stopped the children and ordered them to his desk. Jake shivered in his shoes. He didn't know what Mr. Matthews would say about their behavior. The other students listened in silence.

"What is going on here?" Mr. Matthews began.

"The object that I will drop is going to be significantly heavier than hers," Jake explained. "My object is made of metal and hers is made of wood".

Anna was relieved. Although they had the same problem statement and dependent variables, Anna and Jake's independent variables were different. "My object will be a wooden metric ruler," she told Mr. Matthews.

"Well then it is settled, the two of you have two different experiments and I don't know about you, but I'm looking forward to seeing the results," said Mr. Matthews. Both, Jake and Anna breathed a sigh of relief.

Afterschool, Jake and Anna bumped into each other again. "Great presentation!" Anna said sarcastically to Jake as they walked toward the gym together. "You almost got us into big trouble!" scolded Anna.

"I know it was a close one, but next time ...," Jake threatened, but Anna quickly cut him off.

"There won't be a next time! You will be on your own!"

"Yes, but I've become the science project master and you will need me," giggled Jake as Anna walked away in disgust.

During the final presentation, Anna went first. She read her materials and procedures list aloud before demonstrating her experiment. She then called Jake up to assist. Anna dropped her meter stick, from a height above Jake, by standing on a chair. Jake was asked to catch the meter stick as quickly as he could. Anna repeated the process three times and explained that every experiment must have three trials.

"Now let's switch positions" said Anna. "I'll catch the meter stick this time and you drop it from the same height as I did." They again repeated the procedure three times. Anna's time was a lot quicker than Jake's time as witnessed by the class time-keepers. The students were excited about the results.

After several more students presented their projects, it was time for lunch. Jake would present after lunch and all the students could hardly wait to find out whether girls have a faster reaction time than boys.

"Or, more accurately speaking, does Anna have a faster reaction time than Jake," joked one of the students.

PRACTICE QUESTIONS

Author's Purpose and Vocabulary

1 Which reason BEST tells why the author wrote this story?

- (A) to persuade you to compete in a science fair
- (B) to inform you about your school's science fair
- (C) to entertain you with a story about two kids competing in a science fair
- (D) to explain how to create a winning science experiment

2 Read this sentence from the story.

He had only one independent variable, but before Jake could say what it was, Anna stood up in dismay.

What does *dismay* mean?

- (A) shock
- (B) excitement
- (C) fear
- (D) joy

3 Read this sentence from the story.

Both Jake and Anna were hesitant, but they both stood up and recited their problem statements, simultaneously.

Which word has the OPPOSITE meaning of the word *simultaneously*?

- (A) together
- (B) quietly
- (C) immediately
- (D) individually

PRACTICE QUESTIONS

Author's Purpose and Vocabulary

4 Which pair of words from the passage have almost the SAME meaning?

- A recited, read
- B warned, explained
- C scolded, threatened
- D volunteered, repeated

5 Read this sentence from the story.

He explained to the class that his dependent variables were the reaction times of catching a ruler as it dropped.

Which word has the SAME meaning of the word *dependent*?

- A constant
- B reliant
- C important
- D critical

Making the Science Connection

The Scientific Method involves a series of steps designed to help support a theory or hypothesis. It allows the results from an experiment to be repeated for validity and reliability. The first step is to define or **state the problem** being researched. The problem must be in the form of a question that examines what, when, where, who, or how. The second step involves **researching the problem** using appropriate reference materials including: books, the internet, personal experiences, initial investigations, or expert opinions on the subject. The third step is creating a **hypothesis**. The hypothesis is an educated guess based on the research from the previous step. The hypothesis predicts the outcome of the experiment. The fourth step of the scientific method is designing the **experiment**. This step involves listing and gathering materials, as well as developing and carrying out the procedures. The fifth step is to **record and organize the collection of data and/or observations**. The information collected is called **data**. This data may be organized in a journal, table, chart, or graph. The sixth step is to **analyze the results**. Looking at your data, you must figure out exactly what the information means. Comparative phrases such as, "more than," "less than," etc. are instrumental in writing a results paragraph. The final step of the scientific method is to **draw a conclusion**. At this stage, you must write a summary that indicates whether or not the results support your original hypothesis.

Illustrate the Science Connection

Hypothesis:

Data:

Experiment:

Tie It Together

How does the Science Connection relate to the story "Jake and Anna's Science Projects"?

PRACTICE QUESTIONS

Science Content Questions

page 7

1 Which part of the experiment summarizes the findings and answers the problem statement?

- A forming a conclusion
- B stating the problem
- C analyzing the data
- D collecting the materials

2 Which part of the experiment is in the form of a question which guides the entire experiment?

- A conclusion
- B problem statement
- C data
- D research

3 Which part of the experiment requires the use of reference materials to help understand the problem?

- A forming a hypothesis
- B problem statement
- C recording the data
- D researching the problem

4 Which part of the experiment includes the prediction made before experimenting begins?

- A forming a hypothesis
- B problem statement
- C recording the data
- D researching the problems