



# Express Science Middle School Science Investigative Science

## Curriculum Features

*The Express Science Middle School curriculum is designed as a survey of science topics in order to provide a solid foundation in all of the Sciences. Important concepts are developed in a sequential and stepwise manner that is understandable by all students. The modules are written to increase student interaction by providing a readable, engaging, and informative instructional curriculum that is ready for use in the classroom.*

### **Investigative Science**

Investigative Science contains units that instruct students to think and work using proven scientific practices. The **Scientific Method** unit provides comprehensive instruction on how to organize and conduct a fair test. The **Earth Science, Life Science, Chemistry, Physics, and Environmental Science** units emphasize the components of the Scientific Method by applying examples from that specific content area. Students will understand the use of the Scientific Method as a problem solving format. They will also have multiple examples drawn from each content area to repeat and reinforce the learning.

Formative assessments are included with each module as a valuable instructional strategy. Summative assessments are included with each unit as a confirmation of student success.

## **A. Scientific Method**

This unit provides instruction in the use of the scientific method for problem solving. Each module focuses on a single aspect and provides thorough coverage. The students will be able to follow the logic of the scientific method and be able to design their own scientific experiments.

1. Problem Statement
2. Hypothesis
3. Independent Variable
4. Dependent Variable
5. Control and Constant Variables
6. Fair Testing the Hypothesis
7. Charting the Data
8. Graphing the Data
9. Conclusions from the Data

## **B. Earth Science**

This unit references Earth Science as the discipline for applying the concepts of the scientific method. Specific modules will demonstrate the scientific method and problems associated with the implementation. Students will learn to analyze the implementation of the scientific method, such as detecting bias and recognizing an unfair test.

1. Review, Summarize, and Graph Data
2. Interpreting Data Tables and Graphs
3. Detecting Bias
4. Recognizing an Unfair Test
5. Identifying Unsupported Conclusions

### **C. Life Science**

This unit references Life Science as the discipline for applying the concepts of the scientific method. Specific modules will demonstrate the scientific method and problems associated with the implementation. Students will learn to analyze the implementation of the scientific method, such as detecting bias and recognizing an unfair test.

1. Review, Summarize, and Graph Data
2. Interpreting Data Tables and Graphs
3. Detecting Bias
4. Recognizing an Unfair Test
5. Identifying Unsupported Conclusions

### **D. Chemistry**

This unit references Chemistry as the discipline for applying the concepts of the scientific method. Specific modules will demonstrate the scientific method and problems associated with the implementation. Students will learn to analyze the implementation of the scientific method, such as detecting bias and recognizing an unfair test.

1. Review, Summarize, and Graph Data
2. Interpreting Data Tables and Graphs
3. Detecting Bias
4. Recognizing an Unfair Test
5. Identifying Unsupported Conclusions

## **E. Physics**

This unit references Physics as the discipline for applying the concepts of the scientific method. Specific modules will demonstrate the scientific method and problems associated with the implementation. Students will learn to analyze the implementation of the scientific method, such as detecting bias and recognizing an unfair test.

1. Review, Summarize, and Graph Data
2. Interpreting Data Tables and Graphs
3. Detecting Bias
4. Recognizing an Unfair Test
5. Identifying Unsupported Conclusions

## **F. Environmental Science**

This unit references Environmental Science as the discipline for applying the concepts of the scientific method. Specific modules will demonstrate the scientific method and problems associated with the implementation. Students will learn to analyze the implementation of the scientific method, such as detecting bias and recognizing an unfair test.

1. Review, Summarize, and Graph Data
2. Interpreting Data Tables and Graphs
3. Detecting Bias
4. Recognizing an Unfair Test
5. Identifying Unsupported Conclusions