Components of the Adventure Scouts USA Learning-by-Doing Home and Car Improvement Curriculum

Classroom portion:

The classroom portion consists of a curriculum for various subjects, such as history, math, and science.Â Each curriculum includes important details, such as ideas for group discussions, classroom activities, the estimated educational timeframe, character education, and information on assessment of students.

Visit portion:

During the visit portion, actual professionals from the community, such as home improvement experts and auto mechanics come into the school and work with the students, enabling them to acquire knowledge through learning by doing. We prefer that each student work one on one with a professional.

Standards Based

We have endeavored to create standards-based curriculums for students to be used in the classroom.Â We encourage educators to make necessary modifications to ensure the curriculum meets standards in their district.

Experiential Education

As educators know, experiential education is an educational philosophy centered around learning-by-doing.Â Local experts in a particular field come into the school and give learning-by-doing presentations about a subject matter.Â Students are enabled to engage actively in hands-on activities.Â

Leadership

Leadership is an important part of the program.Â Students acquire knowledge while learning to communicate, how to be resourceful, and how to lead.

Structure of the Program

Our curriculum is designed to be implemented either as a stand-alone curriculum or as part of your already existing curriculum.
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Educatorâ€™s note: Please feel free to alter curriculum if necessary to fulfill district standards.Â We provide examples for in-class discussion, assignments, a Character Education section, which is an opportunity to critically think about and discuss how good character relates to the subject.Â Â

Program Name:

Learning by Doing Car and Home Improvement

Grade Level:

7-12

Sample Classroom Curriculum for the following subjects:
* History
* English
* Science
* Math

Subject: History

Estimated instructional time:

One class period, 15-50 minutes

Class Period 1:

Performance Standards:
* Learns from Models
* Reviews Progress
* Evaluates Performance
* Participation in the Establishment and Operation of Self-directed Work Teams
* Plans and Carries out Strategies for Introducing Students to New Concepts
* Explains the Structure of a System
* Analyzes the Way the System Works
* Develops and Tests Strategies
* Evaluates the Effectiveness of Strategies
Unit/ Focus Objectives:
*Â By the end of this material, students will understand the history of the automobile.

Group Discussion:

Educators discuss the history of the automobile including what the first car was, who invented, where it was invented, and how fast it could go.Â Educators discuss the history of the automobile before it was invented.

Discussion and Critical Thinking Questions

* Did you know that while automatic windows were not in common use until the 1990's, they actually invented by Daimler in 1948?
* Electric cars were invented in Scotland between 1832 and 1839!
* What how cars changed over time?
* How have they remained the same?

Class Assignment:

Students write an essay on one of the following people:
Nicolas Joseph Cugnot (who invented the first self-propelled road vehicle with a steam engine)
Gottlieb Daimler (who made the first prototype of a gas engine)
Henry Ford (inventor of the Model-T)

Class Format:

* Small group discussion
* Individual work

Character Education:

It took car manufactures nearly a century to adopt environment standards in automobiles.Â Why do you think it took so long?Â Do you think it is appropriate to drive a vehicle which is environmentally unsound?Â Why or why not?

Assessment:Â

Test and Quizzes as Appropriate

Grading of essay

Subject: Science

Class Period 1:

Estimated instructional time:
One class period, 15-50 minutes

Performance Standards:

* Learns from Models
* Reviews Progress
* Evaluates Performance
* Participation in the Establishment and Operation of Self-directed Work Teams
* Plans and Carries out Strategies for Introducing Students to New Concepts
* Explains the Structure of a System
* Analyzes the Way the System Works
* Develops and Tests Strategies
* Evaluates the Effectiveness of Strategies

Unit/ Focus Objectives:

â€¢Â By the end this material, students will know the difference between a steam engine and an internal combustion engine in automobiles.
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Group Discussion:

â€¢Â The educator describes the differences between a steam engine and an internal combustion engine.
Discussion and Critical Thinking Questions
* When and why was the steam engine invented?Â What were some its advantages and disadvantages?
* When and why was the internal combustion engine invented?Â What are some its advantages and disadvantages?

Class Assignment:

Students write an essay about the difference between a 4-cycle internal combustion engine and a 2-cycle internal combustion engine.Â When and under what circumstances is each used?

Class Format:

* Class discussion
* Individual work

Character Education:

Why is it better for the environment to use a 4-cycle engine than a 2-cycle engine?Â What is the effect on the environment of using a 2-cycle engine?

Assessment:Â

Test and Quizzes as Appropriate

Grading of essay

Subject: Math

Class Period 1:

Estimated instructional time:

One class period, 15-50 minutes

Performance Standards:

* Learns from Models
* Reviews Progress
* Evaluates Performance
* Participation in the Establishment and Operation of Self-directed Work Teams
* Plans and Carries out Strategies for Introducing Students to New Concepts
* Explains the Structure of a System
* Analyzes the Way the System Works
* Develops and Tests Strategies
* Evaluates the Effectiveness of Strategies

Unit/ Focus Objectives:
* By the end this material, students will be able to determine the amount of tiles and glue needed to lay down a living room floor by using measurements.

Class Discussion:

Student discuss the role proportion plays in home improvement.
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Discussion and Critical Thinking Questions

* Why is math important is home improvement?
* Why is it important to know exact measurement of the space you are working on and the materials you need before you begin?
* What is the value of the old adage, "Measure twice, cut once"?

Class Assignment:

Students told are they need to lay down a tile floor in a living room which measures 24 feet by 50.5 feet.Â The tiles they are using are 8 inches each.Â One pot of glue covers 10 tiles.Â Students determine how many tiles and how many pots of glue will be needed to complete the entire floor.
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Class Format:

* Small group discussion
* Individual work

Character Education:

The tiles which the students used to figure out their math are guaranteed by the manufacture for life?Â What problems does this language cause?Â Whose life?Â The life of tiles, which could be quite short, the life of the person laying the tiles, or the life of the home?Â Would you consider their guarantee inappropriate if the tiles lasted one week?Â One year?Â 10 years?Â If you felt the guarantee was inappropriate, how would you approach the company about the problem?

Assessment:Â

Test and Quizzes as Appropriate
Grading of math problem

Subject: English

Class Period 1:

Estimated instructional time:

One class period, 15-50 minutes

Performance Standards:

* Learns from Models
* Reviews Progress
* Evaluates Performance
* Participation in the Establishment and Operation of Self-directed Work Teams
* Plans and Carries out Strategies for Introducing Students to New Concepts
* Explains the Structure of a System
* Analyzes the Way the System Works
* Develops and Tests Strategies
* Evaluates the Effectiveness of Strategies

Unit/ Focus Objectives:
* By the end this material, students will know how to make a customer complaint if home improvement materials they purchased were inferior.

Group Discussion:

Students break up in small groups.Â Each is given a packet of information about their particular circumstances.Â Examples could be:Â The students purchased wooden two by fours which cracked within a week, or the students purchased floor tiles which started lifting off the floor in a year.Â Each is also given the guarantee the company made and the price of items.

Discussion and Critical Thinking Questions

* What guarantee did the company make?
* Do you feel the company lived up their promise?
* How would you approach the company?
* If you did not get a satisfactory response, what would you do next?
* Are you aware of customer advocacy groups which can help you, such the Better Business Bureau?

Class Assignment:

Students write a complaint letter to the president of the corporation who sold them the home improvement materials.Â Students must use specifics in order to get a response, such as when and where the items were purchased, who they were used, and when they malfunctioned.

* Educators will need to make up packets of information, including a fake company name, a business guarantee, the amount of products ordered, how much they cost, and when they malfunctioned.

Class Format:
* Small group discussion
* Individual work

Character Education:

What is the effect of a false guarantee on those who purchase products?Â Do you that once proved wrong, a company should still legally be allowed to advertise a false guarantee?
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Assessment:Â

Test and Quizzes as Appropriate
Grading of letter