

Linking Core Subjects to Careers

Grade: 10th, 11th, and 12th

Overview: This activity is based on the article, “Core subjects and your career.” Students will read this article to acquire a basic understanding of the importance of English, math, and science skills to an array of careers. They will select several careers they may find interesting and conduct research on them. Then, they will generate a list of their top career choices and analyze the skill levels needed to perform well in those careers.

There are three accompanying worksheets—English and Your Career, Math and Your Career, and Science and Your Career—which were designed to be completed separately or in conjunction with each other. Each worksheet will take approximately two class periods to complete. The equivalent of one class period can be assigned for homework if class time is limited. The activity can be administered in one of the following ways:

- English, math, and science teachers administer their corresponding subject area activity in class and/or for homework
- Guidance counselors administer activities

Outcome(s): Students learn how to explore the connection between the skills that are learned in core classes (English, science, and math) and the world of work. Students also develop skills in career exploration and planning. Students are expected to achieve the following outcomes from this activity:

- Read an article and identify the main points
- Identify daily activities that require English, math, and science skills
- Recognize that different careers require different skill levels of English, math, and science
- Determine what courses can be taken to improve core subject skills
- Generate lists of desirable career areas
- Research different careers using career information resources, such as the *Occupational Outlook Handbook*
- Refine lists of desirable careers based on research
- Relate different skill levels to occupations
- Identify minimum skill level requirements for desired careers

Materials: Students will need access to the following materials to perform this activity:

- Copy of Core subjects and your career, downloadable from the **Educator and Counselor** section of www.asvabprogram.com
- Pen or pencil
- Copy of attached worksheets, English and Your Career, Math and Your Career, and Science and Your Career
- Computer with Internet connection and printer*

* *Note: If students do not have access to the Internet, they can still complete this activity. However, you will need to provide bound copies of the *Occupational Outlook Handbook* or printouts of the occupational descriptions for each of the occupations that the students identify as potential careers (15 for English, 20 for math, and 15 for science)*

Linking Core Subjects to Careers

Procedure: Refer to the following steps to complete this activity:

1. Distribute a copy of the article “Core subjects and your career” and one of the three accompanying worksheets (*English and Your Career*, *Math and Your Career*, or *Science and Your Career*) to each student. Review the instructions aloud. Encourage students to read the questions first so they have an idea of the information they should be seeking in the article. (5 minutes)
2. Have the students read the corresponding section of the article (*English and Your Career*, *Math and Your Career*, or *Science and Your Career*) and answer the questions leading up to researching the occupations on the Internet individually. (30 minutes)
3. Refer students to the online version of the *Occupational Outlook Handbook* and provide assistance, if needed. Students should use the occupational descriptions to complete the worksheet. (45 minutes) If computer time is limited, have them print out their selected occupational descriptions to read at a later time. However, note that this will require printing a minimum of 50 pages per student for all three worksheets.
4. Review and discuss the answers to the worksheet aloud. (15 minutes)
5. Repeat this procedure for the remaining two worksheets.

Name _____

Date _____

English and Your Career

Directions: Read *English and your career* on pages 27-30 of the article *Core subjects and your career* and answer the following questions.

1. English classes are important because they help you improve your _____ skills.

2. What is communication?

3. Identify three activities from the article that people do everyday that require strong communications skills.

1) _____

2) _____

3) _____

Identify two additional activities that people typically do that you think require strong communications skills.

1) _____ 2) _____

4. What are the four basic skills that English classes help you develop?

1) _____ 2) _____

3) _____ 4) _____

5. What are some courses you could take in college to strengthen your communications skills?

1) _____ 2) _____

3) _____

6. What is a complaint that many employers have about some of their employees?

7. What can you do while still in high school to develop your communications skills?

1) _____ 2) _____

8. List five occupations that may interest you for each level of communication (Advanced, Intermediate, and Basic) required to perform well.

√	Advanced College-level English courses are strongly recommended	√	Intermediate College-level English courses are helpful	√	Basic High school English classes are helpful

9. Use the Internet to access the **Occupational Outlook Handbook** at www.bls.gov/oco/ Search each of the 15 occupational titles that you listed in question 8 and read their corresponding descriptions. After you read each occupational description, place a √ in the box to the left of the occupational title if you are still interested in that occupation.

10. When you finish reading about all 15 occupations, make a list of all the occupations that still interest you (those occupations you marked with a √).

Occupations that Interest Me

11. What is the minimum level of English skills you think you need for the occupations that most interest you?

Name _____

Date _____

Math and Your Career

Directions: Read **Math and your career** on pages 31-35 of the article **Core subjects and your career** and answer the following questions.

1. Math skills are necessary to do everyday tasks, such as:

1) _____ 2) _____

3) _____ 4) _____

2. Which of the following occupations do not require math skills?

- a. Loan officer
- b. Carpenter
- c. Economist
- d. Machinist
- e. None of the above

3. Occupations that have higher salaries (pay more) usually require math knowledge.

Circle your answer. true false

4. Most occupations that use practical or general mathematics require a college degree.

Circle your answer. true false

5. Occupations that use _____ math skills may require algebra and geometry, as well as general math skills.

6. Occupations that use _____ math skills require workers to understand and apply mathematical concepts.

7. Occupations that use _____ math skills require a working knowledge of addition, subtraction, multiplication, and division.

8. Occupations that use _____ math skills require an understanding of complex math concepts such as calculus and linear algebra.

Review the four lists of occupations for the advanced or theoretical, applied, practical, and general mathematics categories.

9. Are you surprised that all of these occupations require math knowledge and skills? _____

If yes, what are some of the occupations you thought did not require math skills?

_____	_____
_____	_____
_____	_____
_____	_____

10. What are some classes offered in your school that could help improve your math skills?

_____	_____
_____	_____
_____	_____

11. List five occupations that may interest you for each math skills category (Advanced or Theoretical, Applied, Practical, and General).

√	Advanced or Theoretical Require an understanding of complex math concepts such as calculus and linear algebra	√	Applied Need to understand and apply math concepts, such as statistics and trigonometry
√	Practical May require algebra and geometry in addition to general math skills	√	General Require basic arithmetic such as addition, subtraction, multiplication, and division

12. Use the Internet to access the *Occupational Outlook Handbook* at www.bls.gov/oco. Search each of the 20 occupational titles that you listed in question 12 and read their corresponding descriptions. After you read each occupational description, place a ✓ in the box to the left of the occupational title if you are still interested in that occupation.
13. When you finish reading about all 20 occupations, make a list of all the occupations that still interest you (those occupations you marked with a ✓).

Occupations that Interest Me

14. What is the minimum level of math skills you think you need for the occupations that most interest you?

Name _____

Date _____

Science and Your Career

Directions: Read *Science and your career* on pages 36-40 of the article *Core subjects and your career* and answer the following questions.

1. What important skills do we learn to perform by studying science?

- | | |
|----------|----------|
| 1) _____ | 2) _____ |
| 3) _____ | 4) _____ |
| 5) _____ | 6) _____ |
| 7) _____ | 8) _____ |

2. Many colleges prefer to admit students who have taken science classes.

Circle your answer. true false

3. You should have a minimum of 3 years of high school science classes to get into college.

Circle your answer. true false

4. Science is important only if you want to be a scientist or engineer.

Circle your answer. true false

5. If you are interested in scientific and technical careers, what basic science courses should you take in school?

- | | |
|----------|----------|
| 1) _____ | 2) _____ |
| 3) _____ | 4) _____ |

6. In addition to science, what other background is important if you want to pursue a scientific, engineering, and technology-related career? _____

7. _____ science occupations require workers to understand scientific principles and apply them to their work.

8. _____ occupations require familiarity with the basic principles of biology, chemistry, or physics.

9. _____ science occupations require a thorough knowledge of scientific principles.

10. List five occupations that may interest you for each level of scientific skill (Advanced, Intermediate, and Basic) required to perform well.

	Advanced		Intermediate		Basic
√	A bachelor's degree with several college science courses is usually the minimum requirement; many positions require a master's or doctoral degree	√	Intermediate Some post-high school science training is needed	√	High school courses in these areas should be sufficient

11. Use the Internet to access the *Occupational Outlook Handbook* at www.bls.gov/oco/ Search each of the 15 occupational titles that you listed in question and read their corresponding descriptions. After you read each occupational description, place a √ in the box to the left of the occupational title if you are still interested in that occupation.
12. When you finish reading about all 15 occupations, make a list of all the occupations that still interest you (those occupations you marked with a √).

Occupations that Interest Me

13. What is the minimum level of science skills you think you need for the occupations that most interest you?

English and Your Career Answer Key

Directions: Read *English and your career* on pages 27-30 of the article *Core subjects and your career* and answer the following questions.

1. English classes are important because they help you improve your communications skills.

2. What is communication?

The ability to understand information other people give us and to have other people understand what we tell them.

3. Identify three activities from the article that people do everyday that require strong communications skills.

1) Write a letter

2) Make a phone call

3) Give someone instructions

Identify two additional activities that people typically do that you think require strong communications skills.

1) _____ 2) _____

4. What are the four basic skills that English classes help you develop?

1) Reading

2) Speaking

3) Writing

4) Listening

5. What are some courses you could take in college to strengthen your communications skills?

1) Literature

2) Writing

3) Grammar

6. What is a complaint that many employers have about some of their employees?

Some technically competent workers are unable to explain what they are doing, to understand or explain what their part of a project is, or to relate their task to what others are doing.

7. What can you do while still in high school to develop your communications skills?

1) Read outside of class

2) Get involved in extracurricular activities

Answers for questions 8 through 11 are arbitrary.

Math and Your Career Answer Key

Directions: Read *Math and your career* on pages 31-35 of the article *Core subjects and your career* and answer the following questions.

1. Math skills are necessary to do everyday tasks, such as:
 - 1) [Balance a checkbook](#)
 - 2) [Cook](#)
 - 3) [Shop for groceries](#)
 - 4) [Create a personal budget](#)

2. Which of the following occupations do not require math skills?
 - a. Loan officer
 - b. Carpenter
 - c. Economist
 - d. Machinist
 - e. [None of the Above](#)

3. Occupations that have higher salaries (pay more) usually require math knowledge.
Circle your answer. [true](#) false

4. Most occupations that use practical or general mathematics require a college degree.
Circle your answer. true [false](#)

5. Occupations that use [practical](#) math skills may require algebra and geometry, as well as general math skills.

6. Occupations that use [applied](#) math skills require workers to understand and apply mathematical concepts.

7. Occupations that use [general](#) math skills require a working knowledge of addition, subtraction, multiplication, and division.

8. Occupations that use [advanced or theoretical](#) math skills require an understanding of complex math concepts such as calculus and linear algebra.

Answers for questions 9 through 14 are arbitrary.

Science and Your Career Answer Key

Directions: Read *Science and your career* on pages 36-40 of the article *Core subjects and your career* and answer the following questions.

- What important skills do we learn to perform by studying science?
 - Observe data
 - Interpret data
 - Classify data
 - Communicate data
 - Measure data
 - Think logically
 - Predict data
 - Solve problems
- Many colleges prefer to admit students who have taken science classes.
Circle your answer. true false
- You should have a minimum of 3 years of high school science classes to get into college.
Circle your answer. true false
- Science is important only if you want to be a scientist or engineer.
Circle your answer. true false
- If you are interested in scientific and technical careers, what basic science courses should you take in school?
 - Earth science
 - Chemistry
 - Biology
 - Physics
- In addition to science, what other background is important if you want to pursue a scientific, engineering, and technology-related career? Mathematics
- Applied science occupations require workers to understand scientific principles and apply them to their work.
- Practical Application occupations require familiarity with the basic principles of biology, chemistry, or physics.
- Advanced science occupations require a thorough knowledge of scientific principles.

Answers for questions 10 through 13 are arbitrary.