



Information Technology



Career Cluster Teacher Guide

Resource Description

Information Technology (I.T.) is the use of electronic devices, such as computers and smartphones, and the internet to create, store, retrieve, and transmit data. Information Technology helps improve business productivity, making tasks easier and providing quick access to information through the use of computers, networking systems, and the Internet.

Materials and Resources

- Teacher guide
- <http://mygpsforsuccess.com/information-technology/>
- Cluster student viewing guide
- KWL Chart
- Display paper or individual sheets
- Pen/Pencil
- 1:1 computer or laptops; or group students if limited resources

Vocabulary & Definitions

Adaptive Technology: Set of tools or products created to help people with disabilities to work efficiently and productively.

Agile Development: Set of processes for creating software including creativity and flexibility in software development.

Artificial Intelligence (AI): machines that work and react like humans.

Big Data: phenomenal growth, use and accessibility of information.

Business Intelligence: Array of software and tools that businesses can use to analyze raw data.

Cloud Computing: Umbrella term that includes products, services and platforms that allow businesses and other users to access computing resources delivered to them over the Internet or other networks.

Information Technology Infrastructure Library (ITIL): Sets forth the best practices and standards for providing IT services.

Disruptive Technology: A new technology that surprisingly displaces an already established one.

Green Technology: environmentally-friendly innovations and technology relating to safety, health, energy efficiency, renewable resources and recycling

Virtualization: Development of a virtual version of an IT resource, such as a server, storage, device, or even operating system.

Bell Ringer

1. Have the following displayed on an easel, whiteboard, or individual sheets of paper for students to review and write down their responses:

You're working on a project and your laptop or computer crashes for unknown reasons. What do you do now??

2. Have some students share responses.
3. Make a class list of responses and then open the floor to additional responses after the list is constructed.
4. Facilitate student discussions about how the field of Information Technology is a growing and extremely necessary field for the current technology age.

Objectives

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The student will be able to:

- Identify the central aspects of the Information Technology (IT) Career Cluster including career paths, skills & interest, and education level
- Explore different careers within the Cluster
- Analyze what is known, wondered, and learned (KWL) about the career cluster to begin conceptualizing an individual career map

Anticipatory Set

1. Divide students into pairs – each student gets a KWL Cluster Chart.

Verbal instructions:

- *Review the information from the bell ringer regarding Information Technology careers.*
- *With your partner, list at least 5 items you know about job details, necessary skills, etc. in the “Know” Section.*

2. Have two pairs of students join one-another to form a four-person group

Verbal instructions:

- *Compare and discuss each list.*
- *With your group, list at least 5 things you want to know about the Information Technology Cluster in the “Wonder” Section.*

3. Have groups share their new list with the class.

Introductory Questions

Introductory Questions:

Ask the following questions to the whole class with for students to write down their answers and/or discuss with a partner. Have 2-3 students share their answers:

- Why do you think IT is a good field to enter at the current time?
- How does Information Technology impact students, teachers, your family, and any employee?
- Why is it important for a company, organization, or agency to always have an IT employee on staff?
- What is the difference between computer hardware and installed or downloaded software?

Learning Task & Exploration Activity

1. Introduce the Information Technology Career Cluster Video.

Video Introduction:

Information Technology (I.T.) is the use of electronic devices, such as computers and smartphones, and the internet to create, store, retrieve, and transmit data. Information Technology helps improve business productivity, making tasks easier and providing quick access to information through the use of computers, networking systems, and the Internet.

2. View the Information Technology video (9:06 min length). Have students complete the Student Viewing Guide as they learn about the Career Cluster.
3. Students will fill out the “Career Cluster Research” section of the viewing guide and explore the Information Technology webpage on <http://mygpsforsuccess.com/information-technology/>

Closing

1. Have students complete the “Learned” Section of their KWL with at least 3 pieces of information they learned about the cluster. Students may share out in class as well as discuss with a partner once they have finished.
2. Engage students in a whole class or small group discussion using the Discussion Questions section of this instructional plan – students may use their KWL chart as reference.

Discussion Questions

1. How would you define this Career Cluster?
2. What surprised you about this Career Cluster?
3. What career pathways were represented in this video?
4. Why is *problem solving* an important skill to have in this field?
5. What types of careers are included in this cluster?
6. Why are new jobs being created in this career cluster?
7. What jobs in this career could be obtained directly after high school?
8. IT is a field that is constantly developing. How can you prepare for employment in a field where a job you may do might not even exist yet?

Extended Learning

Suggested activities to increase student learning and exposure to this Career Cluster.

- Using an IT instructor, VISCOM instructor, or through the use of an app or program, have students design their own computer game
- Have students create questions and interview the school's IT Manager or Engineer about the challenges, rewards, and responsibilities of their job.
- Have each student select a career from this Career Cluster. Students will research the career and present information to the class in the form of an oral presentation, poster, PowerPoint, video or Prezi presentation. Information to research and share might include: salary, education required, typical day schedule, roles and responsibilities, positive aspects of the job and challenges associated with the job.
- Have each student make a list of the Career Readiness Skills that are his/her personal strengths, as well as a list of the skills and behaviors required for a career as an educator. Students compare the lists to determine what Career Readiness Skills need to be strengthened.
- Have students complete a job application and/or job interview with a local employer.
- Help students construct a resume for a specific career in this Career Cluster.
- Arrange for students to meet with the school counselor to discuss classes that would help prepare a student for careers in this Career Cluster and certifications that can be obtained during high school that would be of value.
- Have each student identify a postsecondary institution that is offering certifications or degrees that are required for working in this Career Cluster. He or she should obtain and complete admissions and scholarship applications for the school or program.

Notes to Educator

This packet includes suggested activities questions, and materials to enhance student understanding of this career cluster. Each component may be used individually or modified to fit the needs of your classroom.

More information on this Career Cluster can be found at:

<http://mygpsforsuccess.com/information-technology/>

In addition, GPS For Success has an array of resources, including:

- Interest Profiler: *online quiz to assist students in categorizing their interests by possible careers those interests apply to.*
- Scholarship opportunities
- Information on internships
- Sample resumes and cover letters
- Interview preparation materials
- Opportunities for students with disabilities

Information Technology Cluster Student Viewing Guide

Name: _____

1. List five different careers mentioned during the video:

1)

2)

3)

4)

5)

2. **Instructions:** The following questions are specific to the Network Systems and IT Security portion of the Information Technology Career Cluster video.

How do most employees in the IT field start out? What type of degree do many of them hold?

Why is this an important step to begin as an IT professional?

3. **Instructions:** The following question is specific to the Information Support and Services portion of the Information Technology Career Cluster video.

Name at least 2 services that assist people in their job responsibilities or personal lives that IT technicians provide.

1.

2.

Information Technology Cluster Student Viewing Guide

4. **Instructions:** The following questions are specific to the Web and Digital Communications portion of the Information Technology Career Cluster video.

What backgrounds are desirable for getting a career in web design?

Do you think a person's skills and use of social media can lead to a career?

5. **Instructions:** The following questions are specific to the Programming and Software Development portion of Information Technology Career Cluster video.

What are some advantages to being a programmer or software developer?

What skills do you need as a programmer or developer?

Information Technology Cluster Student Viewing Guide

Career Cluster Research

Instructions: Visit <http://mygpsforsuccess.com/information-technology/> to answer the following questions.

Career Cluster Research

1. Pick one career in this field and describe the pathway for that career (the path taken to become employed as your chosen career).

2. What are the education requirements for each of the career fields defined in the video for this cluster?

Network Systems and IT Security

Information Support and Services

Web and Digital Communication

Programming and Software Development

3. Using the career information on the left-hand side of the website, what are the salary ranges for the three different career fields in this cluster?

Information Technology Cluster Student Viewing Guide

4. What are three personal skills and three personal interests that you share with this career cluster?

Skills

-
-
-

Interests

-
-
-

5. Pick one extended interview. Who is the person being interviewed? What are 2 pieces of information that you found interesting in the interview?

Person Interviewed: _____

Interesting Facts:

1.

2.

Name: _____

Date: _____

Cluster: _____

KWL Chart

Know



Wonder



Learned



