Lesson Plan: Exploring Software Development as a Career

Grade Level: 6th-12th grade

Duration: 2 class periods (90 minutes each)

Objectives:

- Students will understand what software development is and its significance in today's world.
- Students will explore the skills and education required for a career in software development.
- Students will be introduced to different roles and opportunities within the field of software development.

Materials:

- Computer and projector for presentations
- Whiteboard and markers
- Handouts with career resources
- Internet access for research
- CodeX or other microcontroller

Preparation:

1. Arrange for a guest speaker (if possible), such as a local software developer or someone from a tech company, to share their experiences and insights.

Day 1: Introduction to Software Development

Engagement (10 minutes):

Begin the lesson by asking students if they use apps, websites, or software on a daily basis.

1. **Student Response:** How does software impact your life?
2. Students should write at least a paragraph response and support with specific examples.
3. Discuss as a small group or whole class.

Activity (30 minutes):

1. Pass out the **Software Developer Graphic Organizer** & **Graphic Organizer Categories** to students (or upload to LMS). Students will fill in the handout while watching the videos, reading, and discussing as a class.
2. Show students the videos on software development:
    a. What is software development?
    b. Understanding Applications
3. Provide the link for students to read more about this career:
    a. IBM - What is Software Development?

Discussion (10 minutes):

Engage students in a discussion about their perceptions of software development. Students will share back answers from the Graphic Organizer and continue to add more information based on discussion. Ask questions like:

- What comes to mind when you think of a software developer?
- Do you know anyone who works in software development?
- What do you think are the essential skills for a software developer?

Activity (30 minutes):
Divide the students into small groups and assign each group a specific software application or tool (e.g., a social media app, a game, a website).

Have each group research and present on the following:

- The purpose and features of the software they chose.
- How software development played a role in creating it.
- What skills and knowledge might be required to develop a similar software application.

Wrap-Up and Exit Ticket (10 minutes):

1. Student Response: Review all information from class today, and write down any questions you have about software development as a career.

Day 2: Exploring Software Development Careers

Review & Engagement (25 minutes):

1. Begin the class by recapping the key points from the previous day's lesson.
2. Students will brainstorm and write questions for the guest speaker.
3. Show students Firia Labs videos:
    a. Who is Firia Labs?
    b. Interview with David Ewing
    c. A Day in the Life of a Software Engineer

Guest Speaker (if available) (30 minutes):
If a guest speaker is available, have them share their experiences and insights about working in software development. Allow time for student questions.

Activity (20 minutes):

1. Lead a discussion on the various career opportunities within software development, including roles like software engineer, web developer, mobile app developer, data scientist, etc.
    a. Watch the video and review website: 20 Software Developer Positions
2. Discuss the education and training paths typically taken by professionals in these roles.
3. In pairs or individually, students will research and create a 1 slide presentation on a specific software development career of their choice.
    a. Include information about required education, skills, and potential salary.

Presentations (10 minutes):
Have students present their findings to the class or have students display their presentations on computer screens and do a Gallery Walk around the class to view what students have learned.

Reflection and Homework (5 minutes):
Ask students to reflect on what they have learned, then answer this question: are you interested in pursuing a career in software development?

1. **Exit Ticket:** write a short reflection and any additional questions students may have.

Assessment:

- Participation in class discussions and activities.
- Quality of research and presentations on software development careers.
- Reflection and questions about pursuing a career in software development.

Extension Activity (Optional):
Arrange a field trip to a local tech company or invite more guest speakers from different areas of software development to provide students with a more in-depth understanding of the field.

Note: Adjust the lesson plan and materials as needed based on the availability of resources and the familiarity of the students with the topic.