

## Lesson Plan

# Crypto Foundations™ Intro to Blockchain and Cryptocurrency

🕒 45 minutes

Prerequisite: Intro to Blockchain and Cryptocurrency



## OBJECTIVES

*Students will be able to...*

- Identify the functionality of blockchain technology.
- Identify cryptocurrency characteristics.

## MATERIALS

### In-Person Lesson

- Pencils/markers
- Computer access
- Internet access

### Virtual Lesson

- Computer access (virtual lesson)

## LESSON OVERVIEW

This lesson aims to provide students with basic knowledge of blockchain and the digital assets that are built upon it. It addresses how cryptocurrency started and the initial design of Bitcoin by Satoshi Nakamoto. Also, it highlights some foundational principles of the blockchain.

## STANDARDS ADDRESSED

- NCSS VIII Science, Technology, & Society: 7.c (*high school*)
- CASEL Framework: Responsible decision-making

## TEACHER NOTE

This lesson includes format considerations for virtual and in-person instruction.

| SECTION                   | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | FORMAT                                                                                                                                                                                                                                       | DURATION |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Opening                   | <p>Students begin with bell work answering the questions:</p> <p><b>Why do you think it is important to learn about blockchain?</b></p> <p><b>In your opinion, what makes blockchain technology so unique?</b></p> <p>Answers will vary but may include the following ideas:</p> <ul style="list-style-type: none"> <li>Blockchain is the technology that runs cryptocurrencies, so by understanding it, I will better understand how to use cryptocurrency.</li> <li>What makes blockchain technology so unique is the ability to safely and securely store huge amounts of data.</li> <li>The way Blockchain works and stores data may open more opportunities for future technology.</li> </ul> <p>Note<br/>Provide visual support for ESL students /other students who may benefit.</p> | <p>Virtual: Answer individually in chat (shared with the whole class), or have some students share with the whole class.</p> <p>In-Person: Discuss as a class.</p>                                                                           | 5 mins   |
| New Learning / Discussion | <p>Start with the whole group: “Blockchain technology has become progressively used throughout many industries beyond cryptocurrency because of how securely it helps record and store data. Let’s dig deeper to learn more about how blockchain is being adopted in different industries.”</p> <p>Divide students into four groups. Each group will research three aspects of blockchain technology and how it is currently used or can be used in the future. Each group will cover one of the following industries:</p>                                                                                                                                                                                                                                                                  | <p>Virtual: Breakout group. Participate in the discussion via chat, unmuting, or another format. Record notes on the handout.</p> <p>In-Person: Research and participate in the discussion with your group. Record notes on the handout.</p> | 15 mins  |

| SECTION                            | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | FORMAT | DURATION |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------|
| New Learning / Discussion (cont'd) | <ul style="list-style-type: none"> <li>• Supply chain management</li> <li>• Food quality control</li> <li>• Healthcare</li> <li>• Government (e.g.: voting and government IDs)</li> </ul> <p><b>Note</b><br/>Some examples of resources that can be shared with students include:</p> <p><a href="#">Blockchain In Food Industry: Food Traceability And Safety</a></p> <p><a href="#">Building a Transparent Supply Chain</a></p> <p><a href="#">5 blockchain healthcare use cases in digital health</a></p> <p><a href="#">How blockchain can transform government sector: E-government, e-voting, e-identities and e-documents</a></p> <p><a href="#">11 Industries Blockchain Will Change Forever</a></p> <p><a href="#">Arizona becomes first state to offer driver's license and state ID in Apple Wallet</a></p> <p>The links have been chosen to spark an understanding of the various ways to use Blockchain and are not definitive.</p> |        |          |

| SECTION           | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                               | FORMAT                                                                                                                                                             | DURATION |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Activity          | <p>Each group should create a short presentation that covers the following points:</p> <ul style="list-style-type: none"> <li>• How blockchain technology is being used in this industry</li> <li>• How blockchain technology can improve this industry function</li> <li>• Any more interesting findings you have.</li> </ul> <p>Each group shares its research results/presentation with the class.</p> | <p>Virtual: Discuss as a class via unmuting or chat.</p> <p>In-Person: Discuss as a class.</p>                                                                     | 20 mins  |
| Activity (cont'd) | <p>While listening, other students can take notes, and write down questions they have.</p> <p>After students finish the activity, have students share their thoughts and what they learned from their peers.</p> <p><b>Note</b><br/>Consider giving the students a chance to ask questions they might have.</p>                                                                                           |                                                                                                                                                                    |          |
| Closing           | <p>"Wonderful job with your research and presentations today! We have learned that the capability of blockchain technology is much bigger than being limited to one industry. Some of this information might not be fully adopted yet, so there may be some hiccups, but we should not be surprised when we hear about blockchain being used in more places than just cryptocurrency."</p>                | Summarize the learning.                                                                                                                                            | 1 min    |
| Evaluation        | <p>As an exit ticket, have students answer the following question. Now that you learned more about blockchain technology, What surprised you most about today's presentations of using blockchain technology?</p>                                                                                                                                                                                         | <p>Virtual: Answer individually in chat (shared with the whole class), or have some students share with the whole class.</p> <p>In-Person: Discuss as a class.</p> | 4 mins   |