Outline:

Use selected on-line articles to explore current issues related to crypto currencies such as BitCoin. A focus for learning is: the underlying technologies, impacts on society, and impacts on the environment.

Objectives:

* C1.4 describe how electronic access to information influences our everyday lives.
* C2.1 describe the negative effects of computers and computer use on the environment.
* C3.1 describe legal and ethical issues related to the use of computers.

**BitCoin & Crypto currencies**

Use the following resource to answer the questions below:

* <https://www.investopedia.com/tech/most-important-cryptocurrencies-other-than-bitcoin/>

1. What is a “crypto currency” and how are “crypto currencies” different from traditional currencies (money)?
   1. Crypto currencies are digital currencies, that are more secure and is easy to use unlike traditional currencies
2. BitCoin is the leading crypto currency that most people know. What are some other crypto currencies and what are their unique features?
   1. Litcoin is the other cryptocurrency that has a lower value but has very fast interactions unlike bitcoin which takes some time for on the spot transactions.

**Block Chains Explained**

Use the following resource to answer the questions below:

* <https://www.investopedia.com/terms/b/blockchain.asp>

1. “Block chains” are the basic technology behind crypto currencies and other emerging technologies. Explain block chains work with respect to:
   1. What they store
      1. They store interactions date time and amount
   2. How they work
      1. For every transaction put in the block chain it’s as same as carving it in stone you need to destroy the stone to get rid of evidence.
   3. How they are secure and private
      1. Block chains store a unique serial number to every transaction, and it takes a lot of time to decode it because its too long for most computer’s
   4. How they use public and private encryption keys
      1. Everyone has a personal key and a public key every transaction has a private and public key with it and miners decode them and add the transaction to the block chain
2. How does BitCoin use block chains?
   1. It uses block chain to track every one transaction and share it publically
3. What are some advantages and disadvantages of block chains?
   1. An advantage is that it’s easy to track transactions so if any criminal activity is going on it’s easily trackable but a disadvantage is that there is nothing in between to stop suspicious transactions.

**Crypto-Games & Other Applications**

Use the following resource to answer the questions below:

* <https://egamers.io/beginners-guide-to-crypto-games/>

1. What are some interesting Crypto Games (i.e. games that use Block Chain technology) available for Android or iPhone?
   1. CryptoByte
   2. Crypto heros
   3. Crypto idle master
2. How are Crypto Games different from conventional games?
   1. What you earn in one game can be transferred to another an example is that you earn gold in one game and in the second game that gold gets transferred for use.
3. What are some other real-world applications of block chains besides games and crypto currencies?
   1. Storing bank transfers or handling business or just storing large quantities of specific data.

**BitCoin & Society**

Read the following resources before answering the questions below:

* <https://www.cnet.com/how-to/what-is-bitcoin/>
* <https://www.independent.co.uk/life-style/gadgets-and-tech/news/bitcoin-price-fall-criminals-blockchain-anonymous-cryptocurrency-zcash-monero-dash-a8174716.html>
* <https://coincenter.org/link/why-ransomware-criminals-use-bitcoin-and-why-that-could-be-their-undoing>

1. How is BitCoin created and what is "BitCoin Mining"?
   1. Bitcoin was created in 2009 by Satoshi Nakamoto. His [goal](https://bitcoin.org/bitcoin.pdf) was to create a ‘new electronic cash system that was completely decentralized with no server or central authority’.
2. Can you buy BitCoin and what does it cost?
   1. Yes you can it currently costs $12,096.05 CAD
3. What can you use BitCoin for?
   1. Transactions(buying things), exchanging for other currencies or just business deals
4. What are the risks of using BitCoin?
   1. The price of bitcoin fluctuates so you could have bought one bit coin for $100 but when you sell it it’s only going to be worth $1
5. How much of BitCoin business is related to criminal activity?
   1. More than 50%
6. What are some of the reasons why criminals use BitCoin?
   1. There is no central bank or government yet it still has value so it’s a perfect target for criminals where there is no in between in any transactions in bit coin.
7. What are some of the disadvantages of BitCoin when used for criminal activity?
   1. All transactions are traced so if any criminal transaction were to happen it can be easily traced since it’s not changeable and public to everyone.

**BitCoin & The Environment**

Read the following resources before answering the questions below:

* <https://www.cbc.ca/news/business/bitcoin-electricity-1.4668768>
* <https://www.cbc.ca/news/business/hut8-medicine-hat-bitcoin-mining-1.4834027>

1. What is a BitCoin “miner” and why are people concerned about BitCoin mining?
   * A bit coin miner is someone who decodes and adds transactions to the block
2. Why does BitCoin mining use so much energy?
   * The Idea is to be the first in the world to add a block but it’s not easily done within a few seconds but takes hours with just one pc so they have hundreds and that effects the electricity bills in other words takes up a lot of energy.
3. Why has Hut-8 decided to locate its facility in Alberta when its head office is in Toronto? What does the city of Medicine Hat provide that is required for mining BitCoin?
   * The city has a powerplant and 4 wind turbines so there is enough power for HUT-8
4. What benefits does the city of Medicine Hat expect to see from this BitCoin facility?
   * The city has a financial benefit from HUT-8’s project and it will benefit the overall economy with new extra jobs
5. What concern does the city of Medicine Hat have about from this Bitcoin facility?
   * When the heat wave arrives there might be a blackout for the whole city
6. What concern do environmentalists have about the Medicine Hat facility and about BitCion mining in general? E.g. how does BitCoin mining harm the environment?
   * They worry it takes up too much energy and it’s causing pollution and if any thing were to malfunction it would cause a huge fire
7. If Hut-8 wanted to build a facility in Brampton, would be in favor of this proposal? Explain why and why not.
   * I would not because there is more downsides then up first, is the personal life of people if a black out were to accour it would disturb a lot of people and it makes no sense to put a facility that consumes so much power in a city that doesn’t have its own powerplant or anything similar.