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)?

Cyrpto currency is a digital or virtual form of money in the form of tokens or coins.

1. BitCoin is the leading crypto currency that most people know. What are some other crypto currencies and what are their unique features?

Another crypto currency is Litecoin and it is alike bitcoin but has a faster block generation rate and offers a faster transaction confirmation. Zcash is another crypto currency but claims to provide extra security and privacy.

**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
   2. How they work
   3. How they are secure and private
   4. How they use public and private encryption keys

Block chain stores information about transactions like the date, time, and dollar amounts of your most recent purchases, who is participating in your transactions.

Whenever a block stores new date it gets added to the blockchain the transaction has to be verified first then stored in a block then it has to be given a hash for a unique code and once that is doen it can be added to the blockchain.

1. How does BitCoin use block chains?

BitCoin has a block chain that they use

1. What are some advantages and disadvantages of block chains?

Advantages

* The transactions are private, secure, and efficient
* Because of the decentralization it is harder to tamper with it
* Cost has been cut by eliminating third party verification

Disadvantages

* susceptibility to being hacked
* Low transactions per second
* History of illicit activities

**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?

The Multiverse, MyCryptoHeroes, Gods Unchained, Ethermon

1. How are Crypto Games different from conventional games?

The main difference is that a crypto game has every process in the game recorded on the block chain and no on can delete or tamper with it.

1. What are some other real-world applications of block chains besides games and crypto currencies?

Some other real world applications of block chains are Trade Finance, Securities Trading, and Smart Contracts.

**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"?  
   It was created in 2009 by Satoshi Nakamoto whos goal was to create a new electronic cash system.

Bitcoin Mining is when the miners inscribe the transactions made on bitcoin in a digital ledger.

1. Can you buy BitCoin and what does it cost?  
   You can buy BitCoin and it costs whatever the people will pay for similar to stocks.
2. What can you use BitCoin for?  
   With Bitcoin you can use it to buy things or sell your BitCoin or just hang on to it.
3. What are the risks of using BitCoin?  
   Being robbed of your BitCoin is a risk like when a hacker took $60 million from NiceHash. Another risk is that unlike normal money like a dollar, BitCoins currency can change and may swing from hour to hour.
4. How much of BitCoin business is related to criminal activity?  
   A quarter of BitCoin business is using illegally
5. What are some of the reasons why criminals use BitCoin?

BitCoin allows users to conceal their identity so there wouldn’t be a trace left to them which is one of the main reasons.

1. What are some of the disadvantages of BitCoin when used for criminal activity?  
   All the transactions are recorded on a public ledger on the blockchain.

**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 BitCoin miner is a person who uses special softwares to solve math problems and in exchange receive a number of BitCoins.
2. Why does BitCoin mining use so much energy?  
   BitCoin mining uses 250kWh which is enough to power a standard home for 9 days.
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 BitCoin plant is located right beside the city of Medicine Hats natural gas fired power plant and four wind turbines which makes it consume more than 60 megawatts to mine BitCoins.
4. What benefits does the city of Medicine Hat expect to see from this BitCoin facility?  
   They will receive a significant financial boost from the BitCoin facility.
5. What concern does the city of Medicine Hat have about from this Bitcoin facility?  
   A concern they have is the amount of energy being wasted on the facilitys and they have provisions to pull the plug on it so there wouldn’t be any blackouts for the residents.
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?  
   Environmentalists are concerned by the amount of energy consumed by BitCoin mining especially in a place like Medicine Hat where most of their electricity is coming from fossil fuels.
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 be in favor of it because with the energy they are using on a daily basis is too much and the city is already complaining about it but there city only has around 60,000 people in it while Brampton has a population of close to 600,000.