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.

**Level 1: Cryptocurrencies & Blockchains**

Read the following resources before answering the questions below:

* <https://www.investopedia.com/tech/most-important-cryptocurrencies-other-than-bitcoin/>
* <https://www.investopedia.com/terms/b/blockchain.asp>
* <https://www.cryptoandgamers.com/>

1. What is a “cryptocurrency” and how are “cryptocurrencies” different from traditional currencies (money)?

Crypto Currency is an digital currency and can be used online. It is different because you can only use it on a device which has internet access. Real world money can be used to add money onto your online wallet to use as Crypto Currency. Crypto Currency Is different from real money because it is worth more and it is a digital currency only.

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

| # | Price |
| --- | --- |
| 1. Bitcoin | $69,188, 144,533 |
| 1. Ethereum | $15,230,317,861 |
| 1. XRP | $13,213,553,491 |
| 1. EOS | $3,388,035,838 |
| 1. Litecoin |  |

1. “Blockchains” are the basic technology behind cryptocurrencies and other emerging technologies. Explain blockchains work with respect to:
   1. What they store

They store transactions between different people or computers.

* 1. How they work

It works with Blocks. A blockchain is a collection of data. The data is added to a block in the blockchain, by connecting it with other blocks in chronological others creating a chain of blocks linked together.

* 1. How they are secure and private

A blockchain is a chain of digital blocks that contain records of transactions. Blockchains are decentralized and distributed to networks that are continually updated and kept in sync.

* 1. How they use public and private encryption keys

The public key is used with a hash function to create the public address

that Bitcoin users use to send and receive funds. The private key is kept secret and is

used to sign a digital transaction to make sure the origin of the transaction is legitimate.

1. How does BitCoin use blockchains?

A network of computers uses blockchaintechnology to manage the database that records Bitcoin transactions.

1. What are some other real-world applications of blockchains?

Payment processing and money transfers, Monitor supply chains, Retail loyalty rewards programs, Digital IDs, Data sharing, Copyright and royalty protection

1. What are some advantages and disadvantages of blockchains?  
   With Blockchain you can do business with anybody. Including people who you don’t know or trust.
2. Blockchain based games are the latest development in the gaming industry. Research the topic “Crypto Games” (google) to answer the following questions.
   1. What are some interesting Crypto Games available for Android or iPhone?

Hunter Coin, Spells of Genesis, Bitcomon Go.

* 1. How are they different from conventional games?

These are games that let you simulate mining Crypto Currency.

**Level 2: 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. Who created BitCoin and who owns BitCoin now?  
   An unknown group or single person under the name of Satoshi Nakamoto.
2. How is BitCoin created and what is "BitCoin Mining"?  
   BitCoin mining is recording transactions which result in bitcoins.
3. Can you buy BitCoin and what does it cost?

Yes. 1 Bitcoin = $3,791 US   
Dollars

1. Why would you want to buy BitCoin and what can you use it for?

You can buy bitcoin because overtime it gains more value just like stocks. You can use it as an alternative to investing in stocks.

1. What are the risks of using BitCoin?

Bitcoin value may go down resulting in loss of your money.

1. How much of BitCoin business is related to criminal activity?

About 25% of Bitcoin users are related to criminal activity.

1. What are some of the reasons why criminals use BitCoin?

Criminals may use bitcoin because when you do a transaction you can be anonymous.

1. What are some of the disadvantages of BitCoin when used for criminal activity?

1. Many people dislike BitCoin because they think it is only good for criminal activity.   
   Is this true? Write a supported opinion paragraph (SOP) to explain your position.  
     
   Guidelines for writing a supported opinion paragraph (SOP)

* <http://schools.peelschools.org/sec/fletchersmeadow/studentlife/OSSLTprep/Documents/Sample_%20Writing%20a%20Supported%20opinion%20paragraph.pdf>

Yes I believe that it is only good for criminal activity. This is because anyone can do a transaction on it and will not be tracked. They cannot be tracked because the website keeps all transactions anonymous. Also, if a criminal decides to do business with someone else, they don’t need to meet them or trust them as none of their info will be able to be viewed. This make it easier for criminals to do bad things and transactions.

**Level 3: 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?  
   Bitcoin Miner is computer hashing for bitcoins. People are concerned because it uses too much electricity.
2. Why does BitCoin mining use so much energy?

This is because to mine bitcoin you need a good amount of computers all running at the same time to mine bitcoin.

1. 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?

They relocated because in Alberta they can stop the energy so they do not cause any blackouts for residents.

1. What benefits does the city of Medicine Hat expect to see from this BitCoin facility?

They expect to see a financial boost from the new facility.

1. What concern does the city of Medicine Hat have about from this Bitcoin facility?

A concern is that the facility is using a lot of energy where they use fossil fuels too make energy.

1. 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?

This facility uses to much energy that comes from fossil fuels. This leads to a lot of pollution into the city.

1. If Hut-8 wanted to build a facility in Brampton, would be in favor of this proposal. Write a SOP to justify your position.

Hut-8 is a Bitcoin mining facility located in medicine hat. If they were too make a facility in Brampton, I would only be in favor if they use clean energy. By this I mean using electricity created with wind water etc.

If they use dirty energy such as fossil fuels or coal, I would not be in favor of opening a facility in Brampton. I would much rather have them open a facility somewhere else other than Brampton.