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)?

Cryptocurrency is digital currency. Cryptocurrency is worth more than traditional currency for example 1 bitcoin is worth 5,130.5 Canadian dollars.

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

Some other cryptocurrency are Litecoin, Ethereum, Zcash and Dash. They can be mined from your CPU or GPU. The cap for bitcoin is 21 million and the cap for Lite coin is 84 million.

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

Blockchain stores data

* 1. How they work

Transaction is placed in the block by the miners.

* 1. How they are secure and private

The participants have their own private key that are assigned to transactions and they have features that will keep your account safe

* 1. How they use public and private encryption keys

The public key is used with hash functions to create a public address that bitcoin miners use to send and receive funds. The private key is kept secret and is used to sign digital transaction to make sure the person transaction is legit.

1. How does BitCoin use blockchains?

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

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

Payment processing and money transfers and Real estate, land, and auto title transfers.

1. What are some advantages and disadvantages of blockchains?

With Blockchain you can do business with anybody who you don't really know or trust and not worry about the transactions because you can take back the money you send or you can just mine back for bit coins which would take a while.

1. 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 and sweatcoin

* 1. How are they different from conventional games?

Yes, because you have to collect online currency on them.

**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?  
   Satoshi Nakamoto created and owns bitcoin
2. How is BitCoin created and what is "BitCoin Mining"?  
   Satoshi Nakamoto made a open source software in 2009. Bitcoin mining is basically mining for bitcoins on your CPU it takes about 2 weeks to get 1 bitcoin but it depends on how good your CPU is.
3. Can you buy BitCoin and what does it cost?  
   Yes, you can buy bitcoins it would cost about 5,130.05 Canadian dollars.
4. Why would you want to buy BitCoin and what can you use it for?  
   I would like a bitcoin because it’s worth a lot and I could keep it and wait for the price of them to get to a peak and then sell. I could use it to a stuff online.
5. What are the risks of using BitCoin?  
   The risk is that the bitcoin market could crash and you would lose all the bit coins you mined, On November 15 2018 the bitcoin market Cap dropped below 100 million dollars.
6. How much of Bitcoin business is related to criminal activity?  
    People use bitcoin to buy things on illegal websites for example the dark web they use bitcoin or other online currency because they won’t get tracked on their purchase
7. What are some of the reasons why criminals use BitCoin? They use bitcoin because their transaction can’t be traced and they don’t have to use their name or I.D
8. What are some of the disadvantages of BitCoin when used for criminal activity?  
   They can take your bitcoin wallet without using their Identity.
9. 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.

It is true that bitcoin is used for criminal activity but not everyone uses it for illegal things. People mine for bitcoins because either they save it for when they go up in price then sell it or some people would use it to buy things online. Criminals only use it on illegal websites to buy illegal things without getting caught because they won’t get traced because they don’t have to use their real name or show their face. In my opinion I think most people who use bitcoin use it to buy things without getting in trouble with the law.  
  
Guidelines for writing a supported opinion paragraph (SOP)

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

**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?  
   People are concerned because it takes up a lot electricity while mining.
2. Why does BitCoin mining use so much energy?  
   it takes a lot of power to run bit coin and to mine it. While your pc is off or asleep it still mines bitcoins
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?  
   they have facility in Alberta so it doesn’t cause blackouts for the residents
4. What benefits does the city of Medicine Hat expect to see from this BitCoin facility?  
   it mines bit coins with 180 computers in one facility. It mines 20 bitcoins a day.
5. What concern does the city of Medicine Hat have about from this Bitcoin facility?  
   people are concerned about the power they use because they use 60 megawatts of power. That could probably make a black out for half of the country.
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?  
   In the hut they have their own natural gas and if its released that could warm up the air around it. If it constantly lets out the gas it could increase global warming.
7. If Hut-8 wanted to build a facility in Brampton, would be in favor of this proposal. Write a SOP to justify your position.

No, because it would use a lot of energy and cause blackouts around the city. If it causes blackouts constantly people would get furious and want the hub-8 to stop doing what they are doing.it shows that the hub releases natural gases and that would cause the area around it to warm up so in the summer time it would be even warmer outside. Hub-8 could be bad in a city because lots of people need electricity to work the hub 8 would be better off outside of a city.