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)?

Digitalized currency, seriously it’s just digitalized currency. Like a stock market, they crypto currency has a fluctuating market.

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

Some other crypto currencies that exist are Litecoin (LTC), Ethereum (ETH), Zcash, and etc… Litecoin has faster block generation rate and faster transaction confirmation. Ethereum is a decentralized software platform that enables smart contracts and distributed applications, to be build and run without any downtime, fraud, control or interference from a third party. Zcash uses https to provide extra security and privacy during transactions, when they are being recorded and published on a blockchain.

**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 information on the date, time and dollar amount of your purchase. Information on who’s participating in the transaction.
   2. How they work
      1. Your transaction has to be verified, so they must confirm the details of your purchase, such as transaction’s time, dollar amount, and participants. After verification your transaction is then greenlit, the dollar amount, digital signature, etc. The block also must be given a unique identification hah code.
   3. How they are secure and private
      1. Hackers would have to hack into the entire blockchain to steal information, also when a new block is added, it would be nearly impossible to change or delete it, unless you change the hash.
   4. How they use public and private encryption keys
      1. They are used as locker combinations where only a single person has the combination. The whole is shared and maintained by a group of users and when its updated, so is theirs. The program will also ensure that the chain does not have any duplicate blocks.
2. How does BitCoin use block chains?
   1. When someone uses bitcoin thousands of computers verify the transaction by solving a hash. This allows the currency to be its own thing and not controlled or managed by anyone.
3. What are some advantages and disadvantages of block chains?

Pros                                                 Cons

Improvement in accuracy     Large cost of technology

Cost reduction           Slower transaction speed

Secure and Private           Used for criminal activities

Easy to understand           Can be hacked into

**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. Casa Tookan Wallet
   2. Trust Wallet
   3. Guild Chat Wallet
2. How are Crypto Games different from conventional games?
   1. Is that they use block chain technology with crypto currency. The currency is earned through various activities in the game, and they are limited to mobile devices.
3. What are some other real-world applications of block chains besides games and crypto currencies?
   1. Tracking a package
   2. Retailing
   3. Banks

**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. It was created by a group of people who wanted to create an electronic currency and is mined by solving and inscribing math equations
2. Can you buy BitCoin and what does it cost?
   1. You can buy Bitcoin by investing in it. Afterwards you can certain an account on a certain base, and link your back information to transfer the currency.
3. What can you use BitCoin for?
   1. You can use bitcoin to buy products and to sell it for money
4. What are the risks of using BitCoin?
   1. Like stock the value of bitcoin can rise and drop drastically, giving it an unstable market
5. How much of BitCoin business is related to criminal activity?
   1. 44% of bitcoin transactions have been used for illegal activities, such as scams, drug deals, and general payment method.
6. What are some of the reasons why criminals use BitCoin?
   1. It allows people to conceal their identity, which allows criminals to store their money safely, so it doesn’t raise suspicion.
7. What are some of the disadvantages of BitCoin when used for criminal activity?
   1. Since every transaction is stored, they can be tracked to its point of origin and location.

**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?
   * It’s the process that involves solving complex math equations by using computer-processing power and people are concerned that this uses a lot of energy.
2. Why does BitCoin mining use so much energy?
   * It uses a lot of energy since, many computers are involved when it comes to mining bitcoin.
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 decided to locate in Alberta since Medicine hat has a natural gas-fired power plant and four wind turbine which helps provide a tremendous amount of power to the bitcoin plant, which consumes more than 60 megawatts of power.
4. What benefits does the city of Medicine Hat expect to see from this BitCoin facility?
   * They have mined over 3,330 bitcoin already, while they mine about 20 a day. And the value of bitcoin has sold for about $9,000 recently.
5. What concern does the city of Medicine Hat have about from this Bitcoin facility?
   * The people of Medicine Hat are worried that the facility is consuming too much energy.
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 about the sheer amount of energy consumed by bitcoin mining, especially since the power is produced by fossil fuels. Since after a while bitcoin mining will decrease in amount, so more energy will be used to mine it. Carbon emissions.
7. If Hut-8 wanted to build a facility in Brampton, would be in favor of this proposal? Explain why and why not.
   * The proposal would not be put not be put into favor, since Brampton does not house enough energy to constantly farm bitcoin every single day.