Read and discuss with your partner:

THE EFFECTS OF MALWARE

On average, there are approximately 2500 cyber security attacks that happen each day.
Malware is used in many of these attacks and over 90% of this malware is delivered using email.
WannaCry is the name of a large scale cyber security attack that occurred in 2017. Malware was used to take over computer servers in systems across Britain, Spain, Russia, Ukraine and Taiwan.
The type of malware used in the WannaCry attack is called ransomware. The malware blocked users and organisations from accessing files and accounts. It did this by encrypting the files. It wanted the organisations to pay money to the creators of the malware in order to be able to gain access to their files and accounts again. The payment demanded was in Bitcoin.
As organisations were not able to gain access to their files and accounts until the ransom was paid, mass disruption was often caused to the daily processes in these organisations. One example of this was the National Health Service (NHS) in Britain. British hospitals were forced to turn away some patients who could not be treated until their personal information could be accessed again.
WannaCry malware was based on a set of malware code called EternalBlue. There have been several malware attacks since WannaCry based on this same EternalBlue code.

Discussion question:

How would you feel if your files were encrypted and you couldn't access them?
Would you pay the ransom, or would you take a different action

Complete the worksheet

• Important

Introduction to the Internet 介绍互联网

The Internet is a global network of computers that are connected to share information.
互联网是一个全球性的电脑网络，用于分享信息

• Important

Internet vs. World Wide Web 互联网 VS 世界寻网

Internet: The physical network of computers, cables, and routers (think about WAN)
World Wide Web (WWW): colective term for all the websites. A service on the internet that uses web pages and browsers.
互联网：电脑和连接设备构成的网络
世界寻网：基于互联网的服务，通过网页和浏览器进行

Story

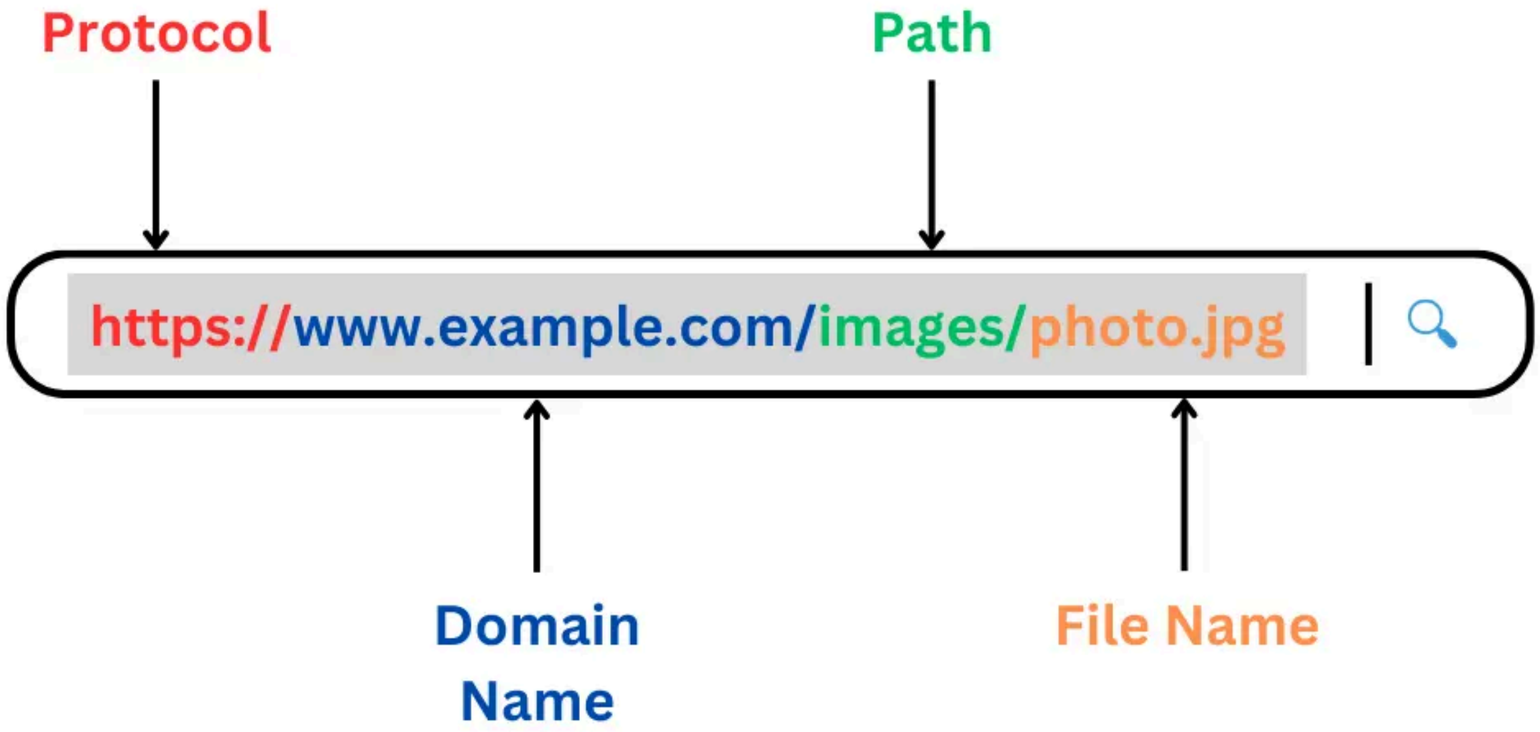
In 1989, Tim Berners-Lee, a visionary computer scientist, revolutionized the digital world by inventing the World Wide Web. Frustrated by the hassle of accessing information across multiple computers, he envisioned a universal solution: connecting computers using networks and sharing information with Hypertext. By October 1990, Berners-Lee developed the core components of the web: HTML, URL, and HTTP. His groundbreaking work led to the establishment of the first web server and web page, forever changing how we access and share information.

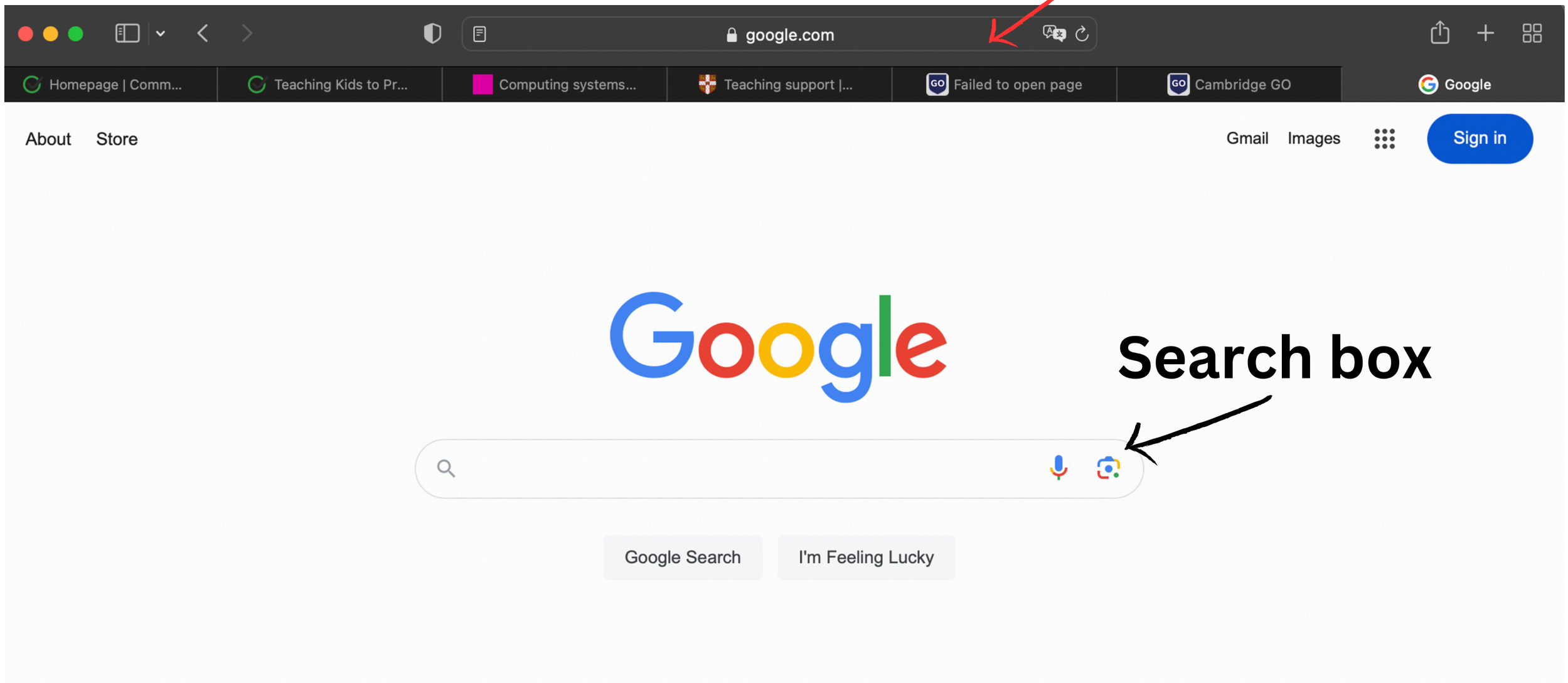
- Important

Requesting and retrieving web pages

What is a URL? URL 是什么?

URL = Uniform Resource Locator （URL 是网站地址，就像我们的房子地址）
It is the address of a web page (like a street address for websites)
Example: https://www.example.com



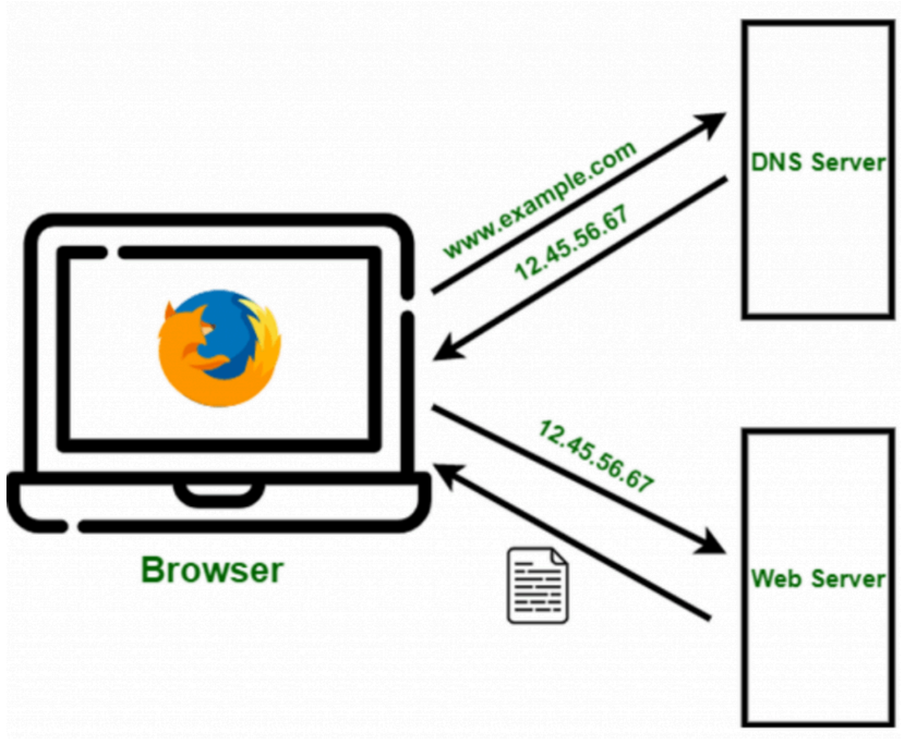

Address bar
google.com
Homepage | Comm...
Teaching Kids to Pr...
Computing systems...
Teaching support |...
Failed to open page
Cambridge GO
Google
About
Store
Gmail
Images
Sign in
Google
Search box
Google Search
I'm Feeling Lucky

• Important

How Web Pages are Requested 网页如何请求

1. You type a URL in the browser
2. The browser sends a request to a Domain Name Service (DNS)
3. The DNS server sends back the IP address
4. Web browser uses this IP address to send a request to a web server to obtain the data for the web page (it uses HTTPS)
5. The server sends the data including HTML, CSS, and active script to the web browser
6. The browser displays the page

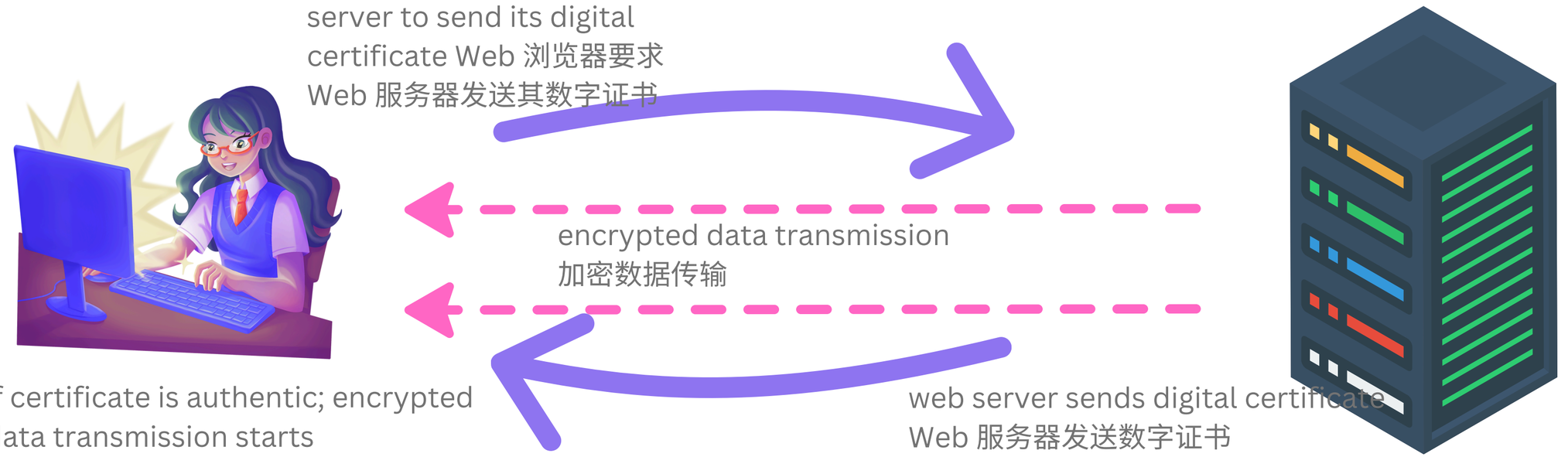
1. 您在浏览器中输入 URL
2. 浏览器向域名服务 (DNS) 发送请求
3. DNS 服务器返回 IP 地址
4. Web 浏览器使用此 IP 地址向 Web 服务器发送请求以获取网页数据（它使用 HTTPS）
5. 服务器将包括 HTML、CSS 和活动脚本在内的数据发送到 Web 浏览器
6. 浏览器显示页面



• Important

HTTP vs HTTPS 区别

HTTP: HyperText Transfer Protocol (No encryption)
HTTP：跨文本传输协议，无加密
HTTPS: Secure version of HTTP (Encrypted and secure) HTTPS 安全，用于重要信息，如银行、网购 It uses **secure socket layer (SSL) or transport layer security (TLS)**



- Important

Web Browsers 浏览器的功能

Examples: Chrome, Firefox, Safari

Functions:

- Provides an address bar 提供地址栏
- Keeps a record of all the web pages that you have visited (history) 记录您访问过的所有网页（历史记录）
- Stores cookies 存储 Cookie
- Displays web pages, allows opening multiple tabs 显示网页，允许打开多个标签页
- Handle multimedia 处理多媒体
- Bookmark favorite sites 收藏收藏的网站

- Important

Digital Currency 数字货币

Digital currency is money that only exists electronically, not as coins or paper.
数字货币是只存在于电脑或手机上的钱，没有纸币或硬币。
Examples:
Cryptocurrencies: Bitcoin (比特币), Ethereum (以太坊)
Government-backed digital money: e-CNY (数字人民币), Digital Euro, etc.
📱 Used for:

- Online shopping 网上购物
- International transfers 跨国转账
- Buying games, music, etc. 购买游戏、音乐等

💡 Stored in:

- Digital wallets (电子钱包), like apps on your phone — e.g., MetaMask, Alipay (支付宝), or PayPal

Electronic methods of payment

- These let you pay **without using cash**
- 这些方式让你不用现金就能付款

💡 **Examples of e-payment:**

- Bank card (银行卡)
- Mobile payment apps (支付宝、微信支付)
- NFC contactless (刷手机/刷卡)
- QR codes (扫描二维码)
- Online platforms (PayPal, Apple Pay, etc.)

🏪 Used in:

- Shops (商店)
- Cafés (咖啡馆)
- Online games and services (网络游戏和服务)

🛡️ How are your payments protected?

1. **Encryption 加密**: Your data is scrambled so others can't read it
   → Your payment info stays private
   → 你的支付信息被"加密"处理，别人看不到
2. **Two-Factor Authentication 双重验证**
   → You enter your password + a code sent to your phone
   → 输入密码后，还要输入手机验证码
3. **Digital Wallet Security 数字钱包安全措施**
   → PIN codes, Face ID, fingerprint unlock
   → 设置密码、面部识别或指纹解锁

⚠️ Stay Safe 小贴士:

- Don't share your passwords 不要告诉别人你的密码
- Avoid public Wi-Fi for payments 不要在公共 Wi-Fi 下付款
- Use trusted apps and websites 使用可信的应用和网站

🏦 Centralized System: Banks 中心化系统：银行

- A **centralized system** has one main **controller or authority**.
- 中心化系统由一个**中心机构或权威**来管理。

✅ Example 例子:

- Your **bank** keeps all your money information in its own system.
- 你的**银行**保管你的账户信息和钱，只有银行能控制。

💡 What this means:

- If the bank's server has problems, you may **lose access** to your money.
- 如果银行的服务器出问题，你可能**暂时无法使用钱**。

🔐 The bank decides:

- Who can open an account
- How fast a payment is processed
- When to freeze or limit an account

  银行决定：
- 谁能开账户
- 转账多快完成
- 是否冻结或限制账户

🔗 Decentralized System: Blockchain 去中心化系统：区块链

- A **decentralized system** has **no single controller**.
- 去中心化系统**没有一个中心控制者**。

✅ Example 例子:

- **Blockchain** uses many computers (called nodes) around the world.
- 区块链使用全球很多电脑（叫做“节点”）一起工作。

💡 What this means:

- Everyone can **see and verify** the records — no one can secretly change them.
- 所有人都可以**查看和验证**数据，不能偷偷改动。

🌍 Even if one computer goes offline, the system **keeps working**.

- 就算一台电脑断电，整个系统**仍然能运行**。

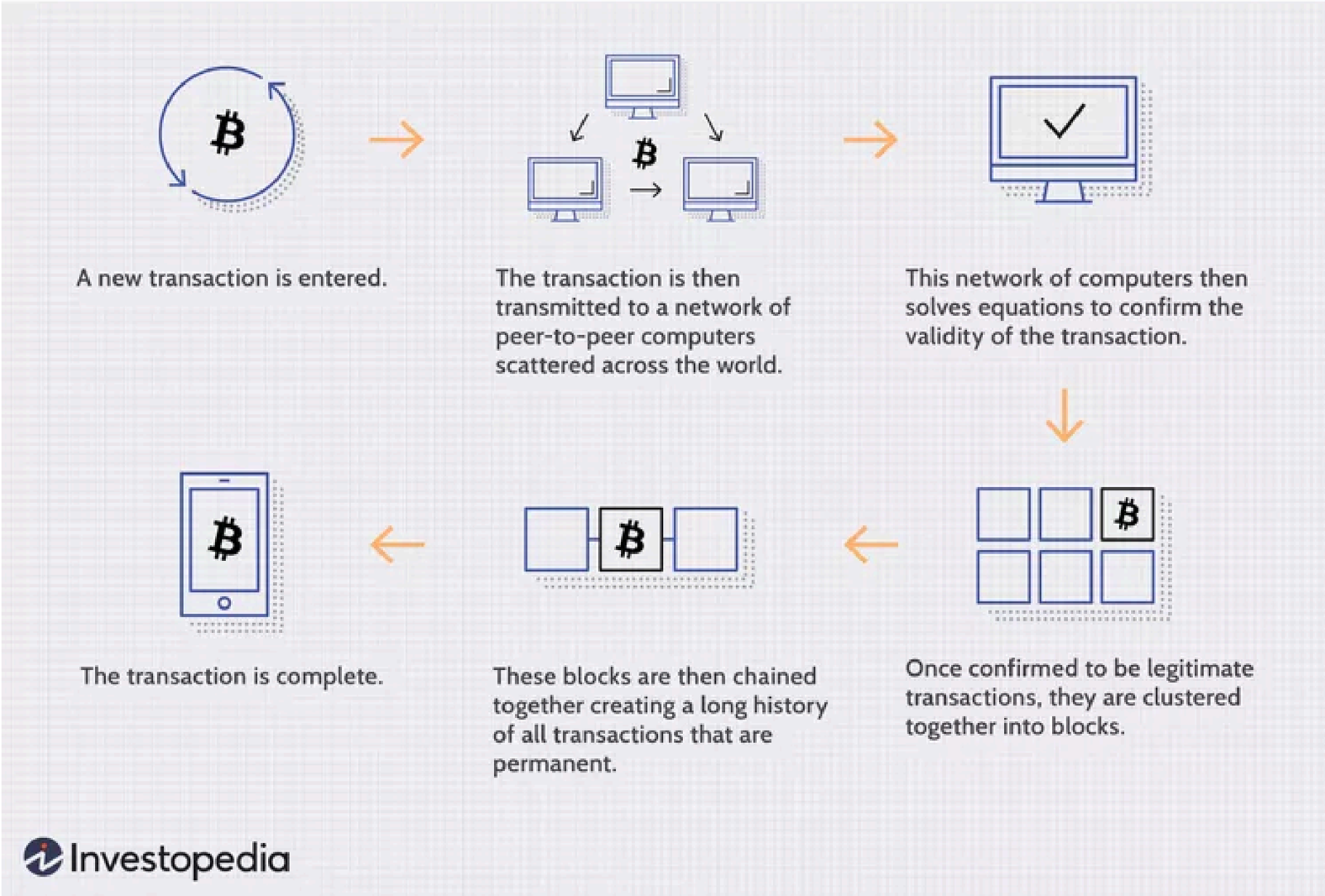
🤔 Simple Analogy 类比解释

- 🏦 **Bank (Centralized):** Like a **teacher** keeping everyone's test scores. Only the teacher can write or change them.
- 银行（中心化）：像一个**老师**保管所有学生的成绩，只有老师能改。
- 🔗 **Blockchain (Decentralized):** Like **every student** writing the scores on a shared notebook. Everyone checks each other's notes.
- 区块链（去中心化）：像**每个学生**都写成绩在一个大家共享的本子上，互相检查，不能随便改。

• Important

Blockchain 区块链

Technology behind digital currencies. Like a digital ledger (record book). Secure and can't be changed easily 区块链是保存数字货币交易记录的技术 安全且难以作弊



Create a poster for a SUIS QP audience to tell them about (choose one topics):
- 为 SUIS QP 受众制作一张海报，向他们介绍（选择一个主题）。

1. **Select a topic**
2. **Do your research**
3. **Create a poster (use canva, ppt, or use AI)**

1. 选择一个主题
2. 做好调查研究
3. 制作一张海报（可以使用 Canva、PPT 或 AI 软件）。

1. Select one topic - 请选择一个主题：

- **Digital currency (Blockchain).**
- **“Then & Now” timeline: From dial-up to fiber-optic Internet.**
- **“Social Media & Mental Health” – Pros and cons of being constantly connected.**
- **“Fake News & Fact-Checking Online” – Be a truth detective!**
- **“Internet of Things (IoT)” – How smart devices connect and communicate.**
- **“Cyberbullying: Stop, Block, Tell” – How to respond and support others.**
- **“Your Digital Footprint” – What you share online and who can see it.**
- **“Think Before You Click” – Detecting phishing, fake sites, and scams.**
- **“How Data Travels” – Visualizing packets, routers, and protocols like TCP/IP.**

Tips for Grade-8 Poster Success

- Keep one clear theme per poster.
- Use bright visuals (flow arrows, icons, short text).
- Include a “Did You Know?” fact bubble for surprise value.
- End with a short call to action, e.g., “Protect Your Data — Think Before You Share!”

八年级海报制作成功秘诀
每张海报保持一个明确的主题。
使用醒目的视觉元素（流程箭头、图标、简短的文字）。
添加“你知道吗？”这样的趣味知识气泡，增添惊喜效果。
最后加上简短的行动号召，例如：“保护您的数据——分享前请三思！”

2. Do you research using AI: 2. 你是否使用人工智能进行研究?

Visit: https://student.magicschool.ai/s/join

and enter code:

wwBfCw

or click:

https://student.magicschool.ai/s/join?joinCode=wwBfCw

3. Create a poster (1 page)

3. 制作一张海报（1页）

Use:

- Canva
- PPT
- AI: www.aippt.cn