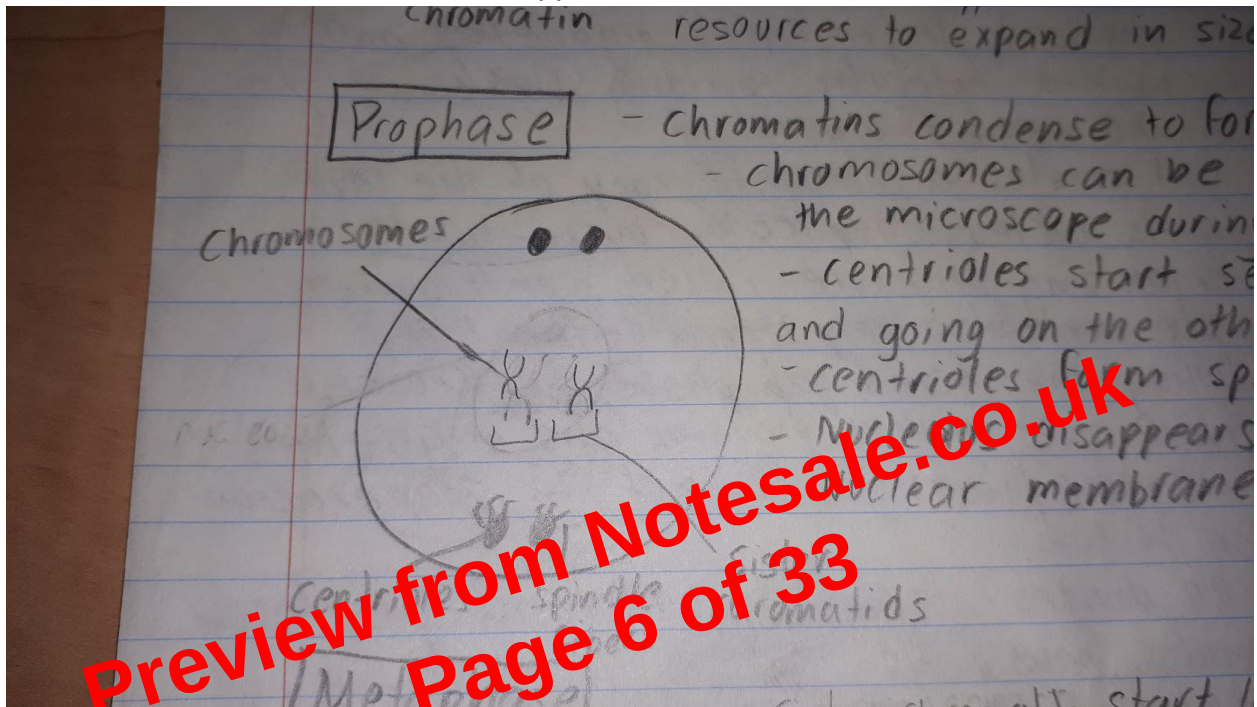
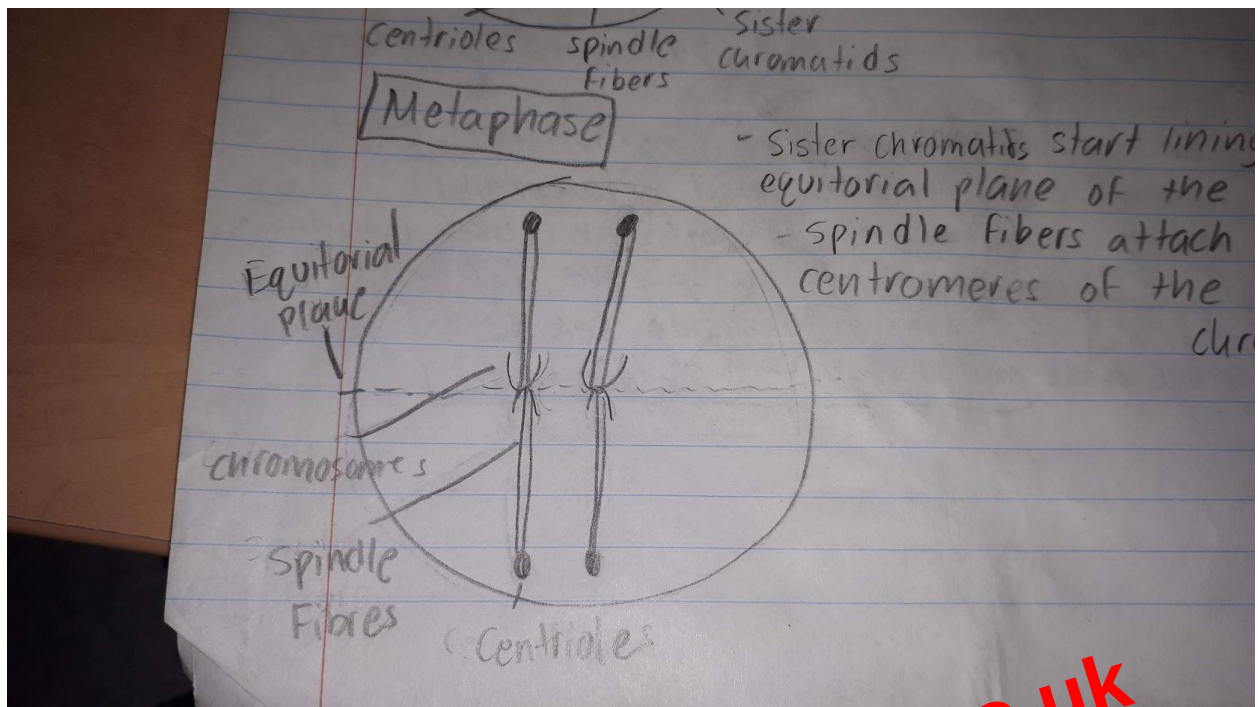


- Chromatins condense to form chromosomes in the daughter chromatid form
- Chromosomes can be seen under light microscope during this phase
- Centrioles start separating and going on the other side
- Centrioles form spindle fibers
- Nucleolus disappears
- Nuclear Membrane disappears



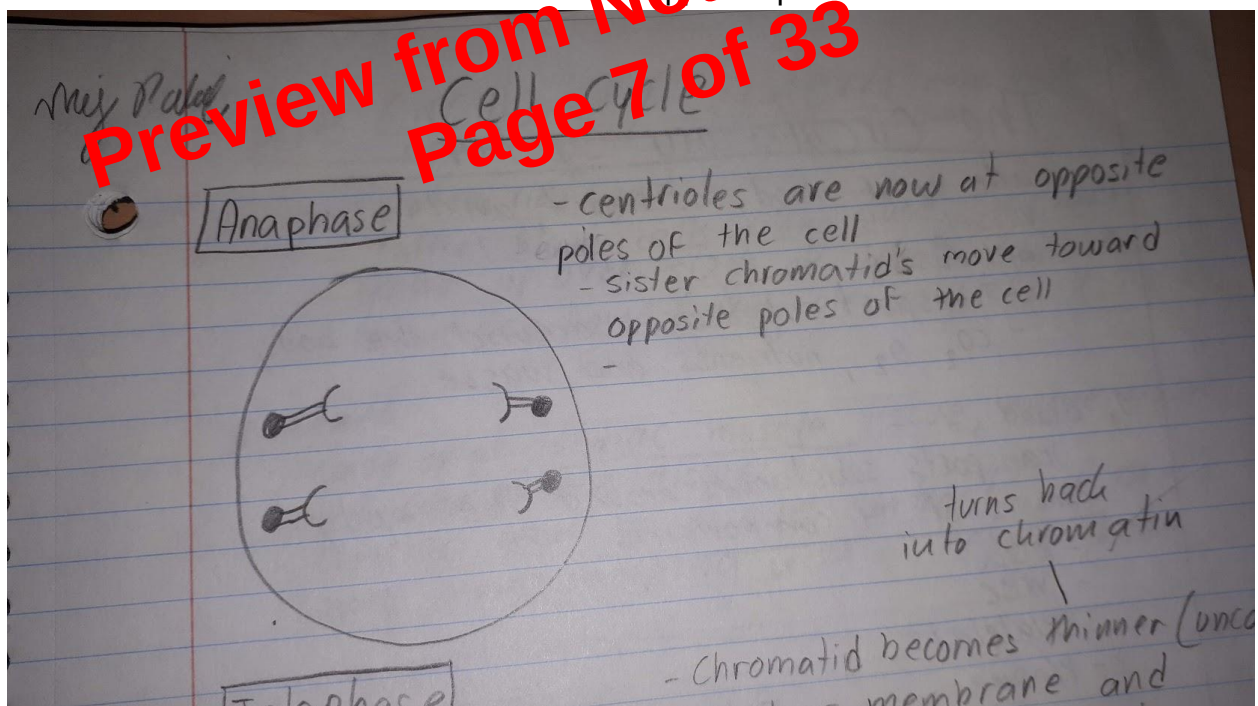
- **Metaphase:**

- Sister chromatids start lining up on the equatorial plane of the cell
- Spindle fibers attach to the centromeres of the sister chromatids.



- **Anaphase:**

- Centrioles are now at opposite poles of the cell
- Sister chromatids move toward opposite poles of the cell



- **Telophase:**

- Chromatid becomes thinner and uncoils to turn back into chromatin
- Nuclear membrane and nucleolus appear again
- Cell membrane starts to move inwards (cleavage forms)

Stem Cells:

- Cells that can develop into different types of cells
- Controlled by the part of the DNA that is switched on
- **Embryonic Stem Cells:** C
- an differentiate into any kind of cell
- **Tissue Stem Cells:** Exist with specialized tissue. Only into differentiate into certain types of stem cells.

Organ Systems:

Respiratory System:

- Provides oxygen to the cells
- Removes Co₂ that is produced in the cells (gas exchanges)

Nasal Cavity:

- A narrow, hollow passage, lined with cilia, and mucus membrane
- Keeps your nose moist and traps little dust and dirt from getting into your lungs

Pharynx:

- Is the throat and has a cone shaped passageway leading from the oral and nasal cavities in the head to the esophagus and larynx
- Filters, warms, and moistens air and conducts it into the lungs

Larynx:

- Is the voice box and sits above the trachea and below the pharynx
- Manipulates pitch and volume

Trachea

- Surrounded by rings of cartilage
- Keeps trachea open
- Allows air to freely flow
- Also known as the windpipe
- Integral part of the bodies airway
- Vital function of providing respiration

Cartilage Rings:

- Bone rings surrounding the trachea
- Keeps the trachea rigid so it does not collapse while breathing

Bronchus or Bronchi

- Either one of two major branches of the trachea that leads to the lungs
- Made of smooth muscles with walls of cartilage to give them stability
- Produces mucus
- Has cilia and filters out any foreign materials entering the respiratory system
- Highway for gas exchange as its a conducting zone for CO_2 and H_2O

Bronchioles:

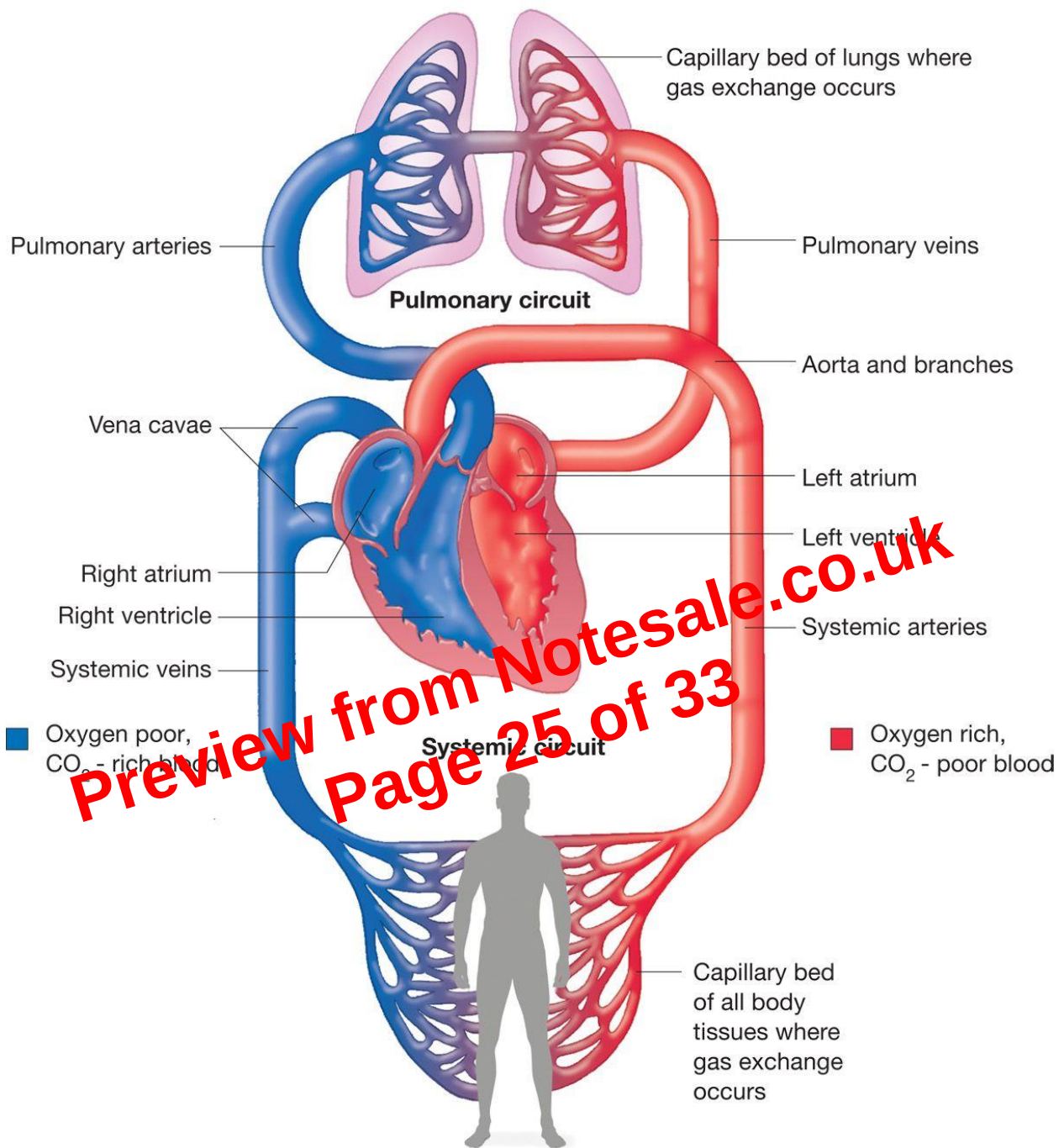
- Tubes that continue to branch into smaller and smaller tubes within the lungs
- To ensure that incoming air is supplied to the alveolus
- The branch like structures in the lung
- As thin as human hair and they get progressively thinner as it gets longer

Alveoli:

- Most important structures of the entire respiratory system
- Tiny, balloon shaped air sacs are at the very end of the respiratory tree or the bronchioles
- They have thin walls (1 cell thick)
- Surrounded by capillaries
- Site of gas exchange
- Specialized for the movement of gases between air and blood
- Supply the blood with oxygen and remove carbon dioxide from body
- Allows CO_2 to be brought and CO_2 to be taken away
- Allows efficient diffusion of gases

Ribs

- Bone cage with 12 ribs
- Supports the walls of the pleural cavity and diaphragm
- Protect heart and the lungs (Thoracic cavity)
- Volume of cavity able to change depending on respiration



Digestive System: