SCIENCE SKILLS

THE HUMAN BODY

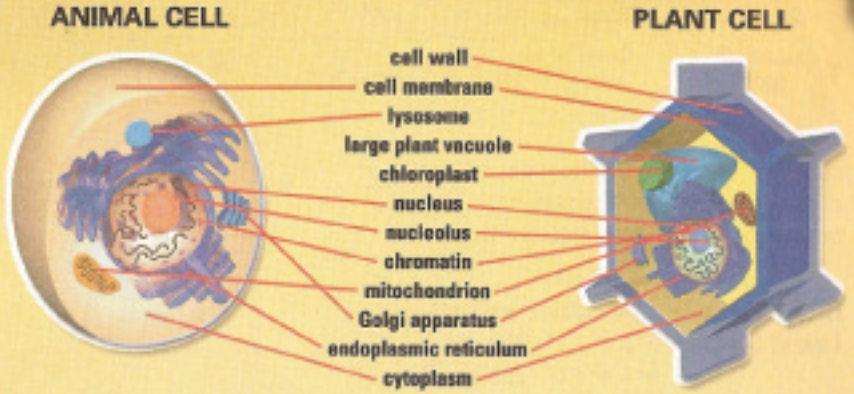
Systems – The body consists of 10 systems: skeletal, digestive, circulatory, muscular, integumentary, endocrine, respiratory, lymphatic, nervous, and reproductive.

Organs – Each system is made up of organs. An organ is a part of the body that has a specific purpose. Some organs, such as the liver or the skin, have more than one function.

Tissues – Organs are made from tissues. A tissue is a part of the organ made from similar cells and, in some cases, extracellular material. For example, bone tissue consists of bone cells and extracellular minerals.

Cells – Cells are the fundamental components of all organisms, and they are composed of several different parts: the nucleus, the cytoplasm, the cell membrane, and various smaller parts with different functions.





Shown is a comparison of an animal cell and a plant cell. Some structures found in these cells are listed above.

PHYSICS EQUATIONS

Density $D = \frac{m}{V}$
m is mass; V is volume

Distance $d = v \cdot t$
v is velocity; t is time

Acceleration $a = \frac{(v_f - v_i)}{t}$
v_f is final velocity;
v_i is initial velocity;
t is time

Distance $d = v_i \cdot t + \frac{1}{2} \cdot a \cdot t^2$
v_i is initial velocity;
t is time;
a is acceleration

Net Force $F = m \cdot a$
m is mass;
a is acceleration

Kinetic Energy $K.E. = \frac{1}{2} \cdot m \cdot v^2$
m is mass;
v is velocity

Force of Gravity $Fg = \frac{(G \cdot m_1 \cdot m_2)}{d^2}$
G is universal gravitational constant;
m_1, m_2 are masses of the two objects;
d is separation distance

Work $W = F \cdot d$
F is force;
d is distance

Power $P = \frac{W}{t}$
W is work;
t is time

Momentum $p = m \cdot v$
m is mass;
v is velocity

Electrical Force $Fe = \frac{(k \cdot Q_1 \cdot Q_2)}{d^2}$
Q_1, Q_2 are electrical charges;
d is separation distance;
k is Coulomb's constant
$k = 9.0 \cdot 10^9 \ \frac{N \cdot m^2}{C^2}$

Electrical Potential Difference $V = \frac{W}{Q}$
V is volts;
W is work done;
Q is electric charge moving

Electric Current $I = \frac{Q}{t}$
Q is electric charge flowing;
t is time

Electrical Energy $W = V \cdot I \cdot t$
V is voltage;
I is current;
t is time

Power $P = V \cdot I$
V is voltage;
I is current

Heat Energy $H = c \cdot m \cdot \Delta T$
c is specific heat;
m is mass;
ΔT is change in temperature

MEASUREMENTS OF ASTRONOMY

Measurement	Earth	Sun	Moon
Mass (m)	5.98×10^{24} kg	1.99×10^{30} kg	7.35×10^{22} kg
Radius (r)	6.37×10^{3} km	6.96×10^{5} km	1.74×10^{3} km
Average density	5.52 g/cm^3	1.42 g/cm^3	3.34 g/cm^3

SPECIFIC HEATS OF COMMON MATERIALS IN $\frac{J}{kg \cdot K}$

Water = 4180	Steam = 2020	Glass = 664	Brass = 376
Alcohol = 2450	Aluminum = 903	Iron = 450	Silver = 235
Ice = 2060	Carbon = 710	Copper = 385	Lead = 130