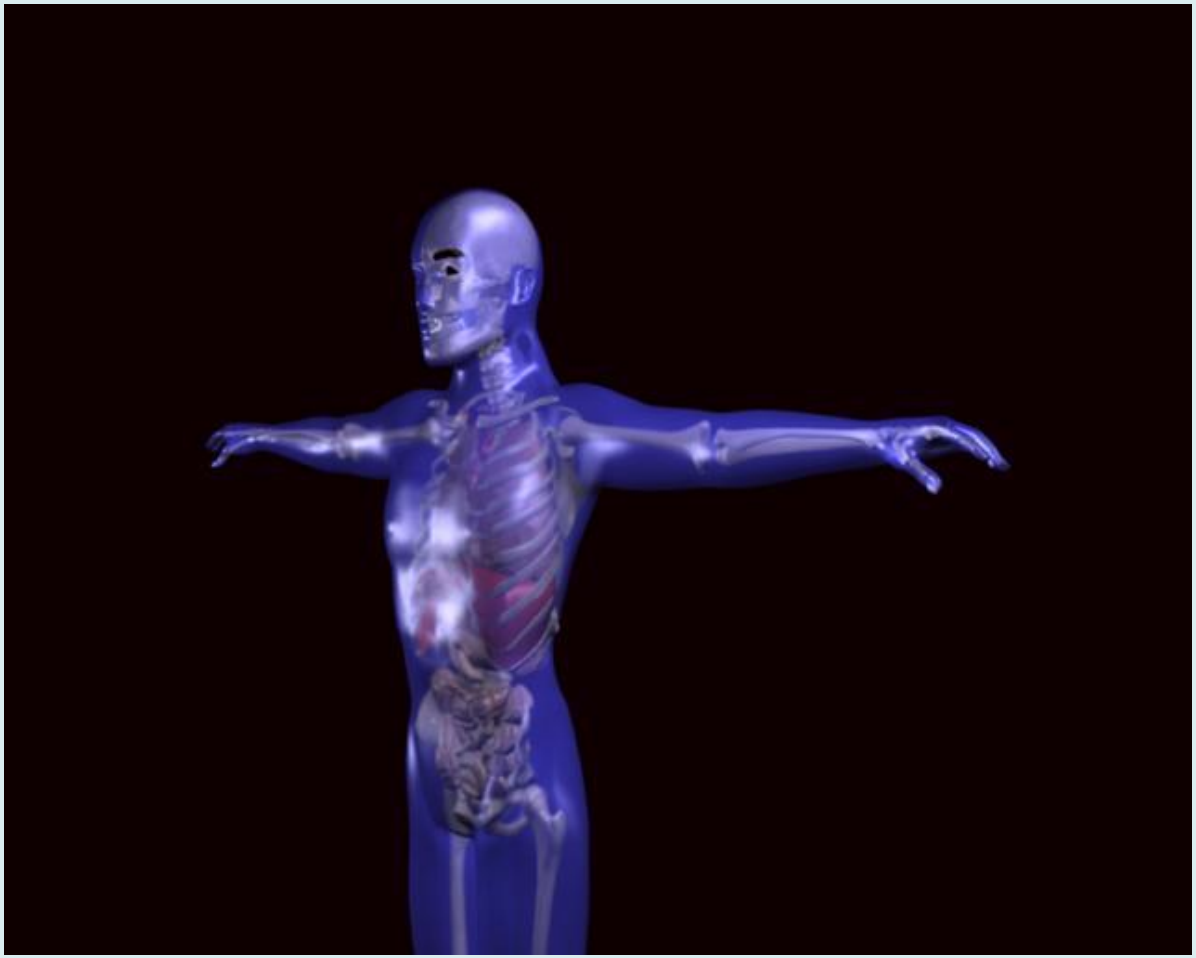
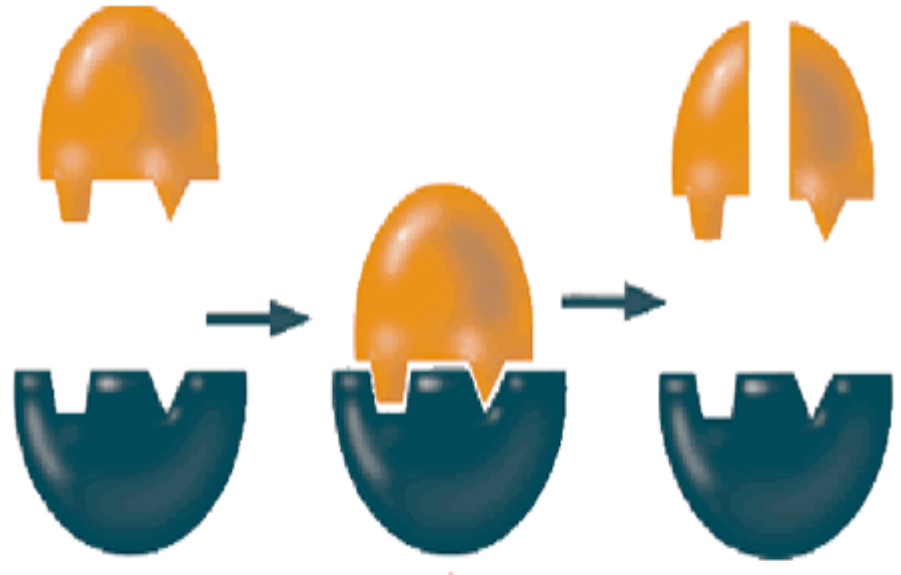
Organ Systems



Lesson 20

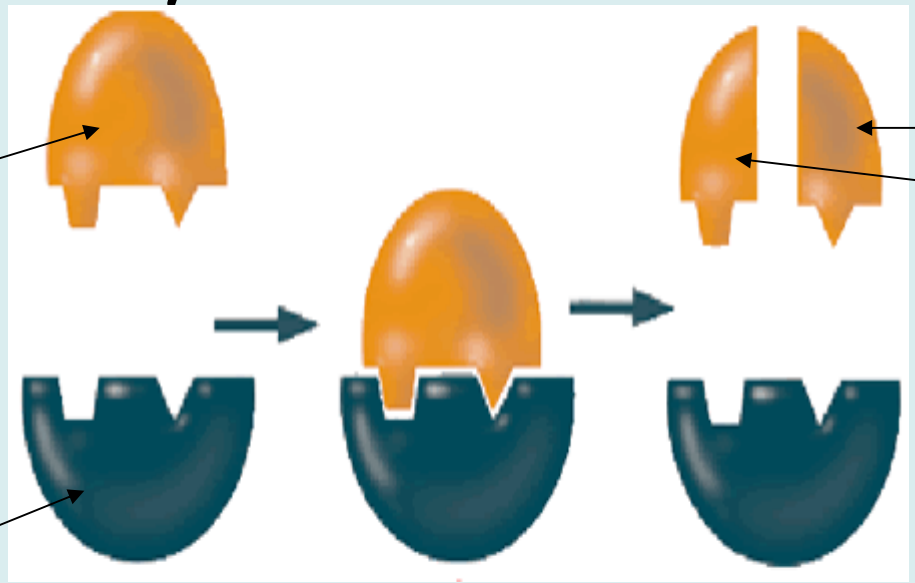
Lesson Starter

Collect and label the diagram



Enzymes

- Here we can see starch being broken down by amylase to form maltose



Learning Intention

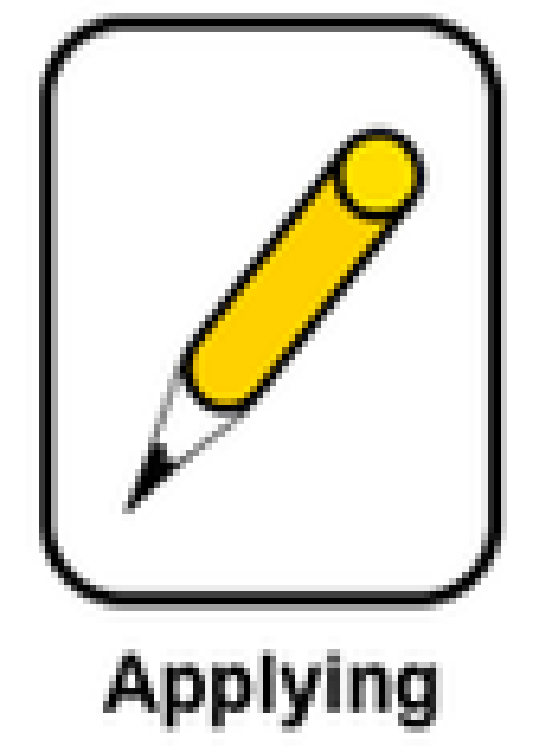
BMI as an indicator of health

Success Criteria

If this is a successful lesson you should be able to:

- State what BMI stands for.
- Use height and mass information to calculate a person's BMI
- Explain how BMI is linked to health

Thinking Skills



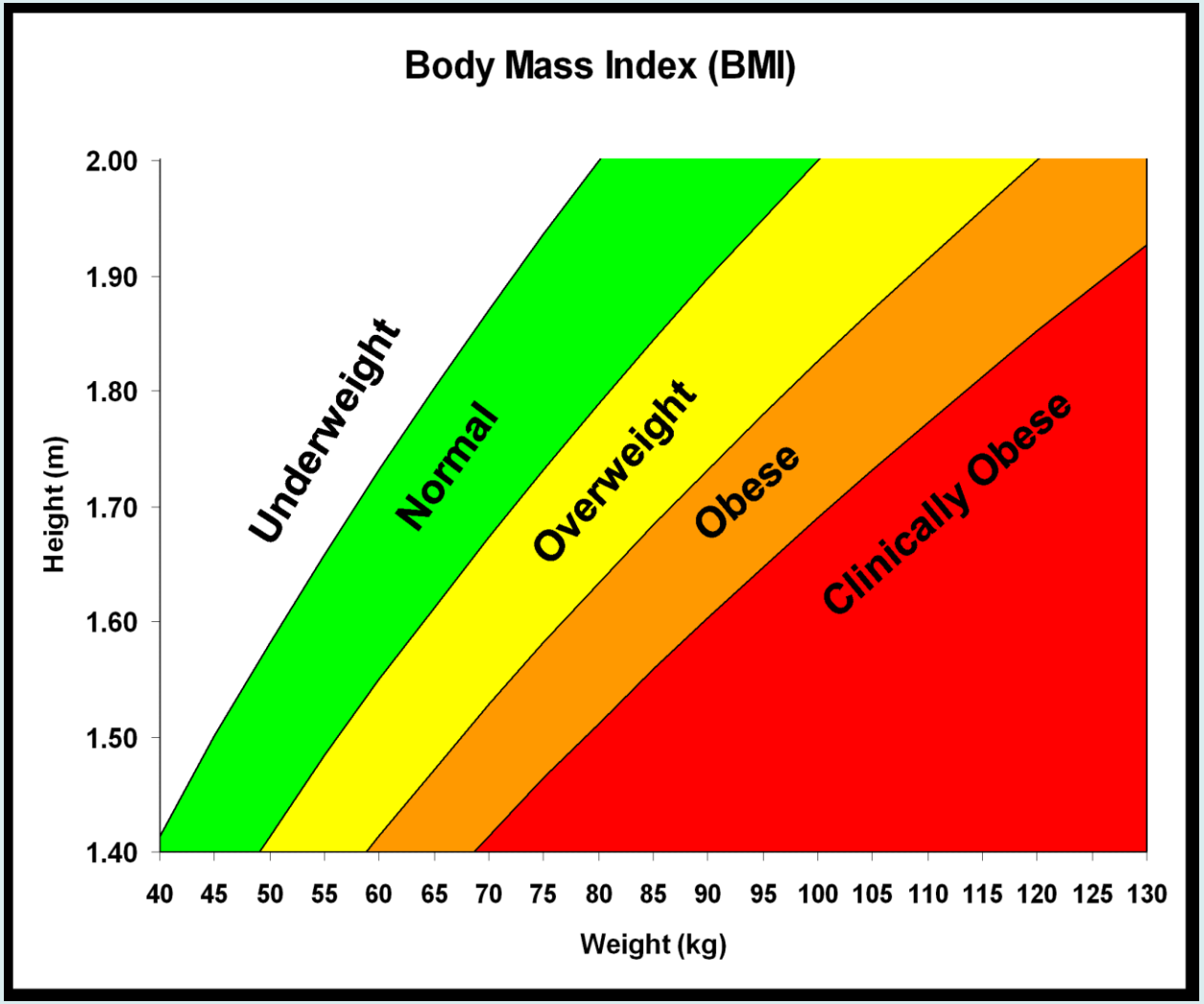
Activity 18

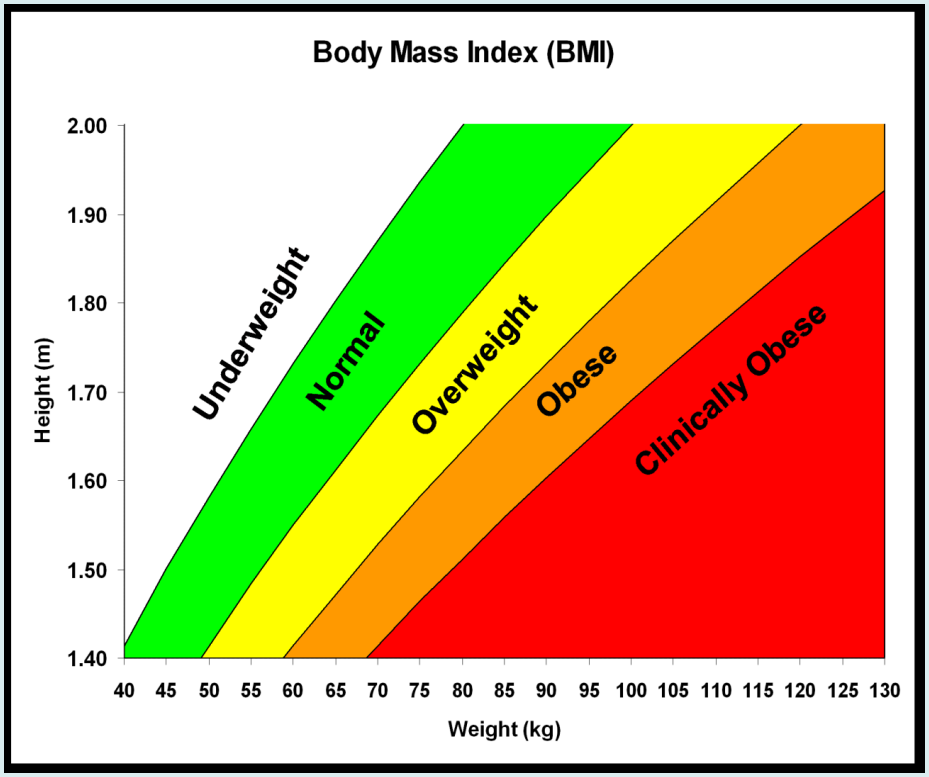
What is BMI?

- BMI stands for 'Body Mass Index'
- It is a measure for human body shape based on an individual's weight and height
- Body mass index is defined as the individual's body mass divided by the square of their height

$$BMI = \frac{\text{Mass (kg)}}{\text{Height(m)}^2}$$

Medical professionals will often use a BMI chart to see if a person is underweight or overweight





Underweight - BMI less than 18.5

Normal - BMI 18.5-25

Overweight - BMI 25-30

Obese - BMI 30-40

Clinically obese - BMI greater than 40

Who has a weight problem?

Use the information on your worksheet to calculate the BMI of these characters

Homer Simpson

Mr Curtis

Mr Burns

Lenny

Moleman

McBain

Comic Book Guy

Name	Mass (kg)	Height (m)	Height^2 (m^2)	BMI
Comic Book Guy	140	1.83		
Homer Simpson	110	1.78		
Lenny	70	1.80		
McBain	109	1.89		
Moleman	55	1.54		
Mr. Burns	50	1.70		

Who is underweight?

Who is normal?

Who is overweight/obese?

Name	Mass (kg)	Height (m)	Height^2 (m^2)	BMI
Comic Book Guy	140	1.83	3.35	41.8
Homer Simpson	110	1.78	3.17	34.7
Lenny	70	1.80	3.24	21.6
McBain	109	1.89	3.57	30.5
Moleman	55	1.54	2.37	23.2
Mr. Burns	50	1.70	2.89	17.3

Who is underweight? *Mr Burns*

Who is normal? *Lenny and Moleman*

Who is overweight/obese? *Comic Book Guy, Homer Simpsom (and McBain ???)*

BMI and Health

Eating Disorders

BMI and Obesity

McBain is NOT actually 'obese' – why does his BMI result show that he is?

BMI can be wrong in somebody who has an excessive amount of lean body mass or muscle.

BMI and Health

1. If a person's BMI is below 17.5, a person may have Anorexia. What harmful effects might anorexia have on a person's health?

The human body can't function properly when it is severely underweight. They can become extremely ill and even die. They experience hair loss, their heart beats slow down, have a weakened immune system and irregular periods.

2. If a person's BMI is above 30, a person is classified as obese. What harmful effects might obesity have on a person's health?

As your BMI increases so do your risks of developing other illnesses that are associated with being overweight or obese such as high blood pressure, diabetes, infertility, heart disease and cancer.

3. If you have a 'normal' BMI, do you need to worry about your health? Why/why not?

BMI can be wrong. An older woman who may not appear obese may actually in fact be so because her fat content is actually greater, so her BMI may not come out to be a number that would consider her to be obese can have the same health risks as somebody who is obese.

Success Criteria

If this is a successful lesson you should be able to:

- State what BMI stands for.
- Use height and mass information to calculate a person's BMI
- Explain how BMI is linked to health