

Life Processes: Compare and contrast the human and ruminant digestive system.

CREATING A MODEL OF THE RUMINANT DIGESTIVE SYSTEM.

ESSENTIAL QUESTION

Is there more than one way to make poo?

WHAT ARE WE LEARNING?

- Recognise that there are life processes common to all living things.
- Understand that these processes occur in different ways in different living things.
- Understand the special aspects of the ruminant digestive system.

TRY THIS WITH

- Year 8-10
- Students who have the stomach for investigative work.
- Students who love replicating models.

FIND

- Recognise
- Rephrase
- Illustrate
- Label
- Summarise
- Ask

Distribute individual key terms associated with the human digestion system.

Use Anatomy Lite as a starting point to uncover what each term does.

Line up as a class and by term in the physical order of monogastric digestion.

Find a video that describes each term (extra points for internal camera work).

Use iMovie to join each video together to form a tour of the digestive system.

Introduce the basic components of the human digestive system

Ask students to create a class "alien dissection" game by contributing something that feels equivalent to their system component.

Watch the ESPN 'Science of Overeating' video.

Understand about surface area and the effect it has on digestion rates.

Conduct the two Weetbix test.

Calculate the surface area of each weetbix and reflect on winning methods.



APPLY

- Illustrate
- Correlate
- Isolate
- Simplify
- Investigate
- Question

Create a large-scale stylised chalk drawing of the human digestive system on the concrete.

Walk through the chalk drawing digestive system - reflect on purpose and process.

Watch 'Grass to Glass'.

Understand the key elements of the ruminant digestive system.

Explain the terms ruminant and monogastric.

Remind students that humans are not able to digest cellulose while ruminants are.

Use the How a Cow Works to identify equivalent points within the digestive system for humans.

If possible access an intestine from the works and demonstrate first hand by passing a marble through the entire length.

For each point on the Fact Sheet validate an equivalent fact in the human digestive system.

Identify similarities, additional features and differences.

Use piktochart to create two linear process infographics that summarise each of the digestive systems.



PRODUCE

- Consider
- Interpret
- Invent
- Substitute

Reflect on surface area and its role in digestion.

Think about how that relates to chewing and digestion in the ruminant system.

Talk about the role of saliva and the enzyme salivary amylase in the mouth.

Conduct a Benedicts Test.

Create a Vine that summarises the process AND the findings of a Benedicts Test.

Remind students that humans are not able to digest cellulose while ruminants are.

Have half the class take the all bran test for a week and report back on their findings.

Watch Hilding Vilding - 'When Sweetcorn turns to poo'.

Create poo by replicating a model of the human digestive system.

Devise a model that is like the create poo model above but for a ruminant.

Use Explain Everything to annotate a film of your ruminant poo making.



SUCCESS CRITERIA

Students can check they have successfully completed the task by:

- Contribute a relevant component to a group iMovie of the digestive system.
- Create two infographics that give a linear summation of the monogastric digestive vs. ruminant digestive system.
- Replicate a model of the ruminant digestive system.

PRINCIPLES	VALUES	KEY COMPETENCIES	LEARNING AREAS	WORD BANK	KEY CONCEPTS
Learning to learn, High Expectations	Innovation, Inquiry and Curiosity; Ecological Sustainability, Excellence.	Thinking, Participating and Contributing	Science, Mathematics and Statistics	1. Ruminant 2. Monogastric 3. Salivary Amylase 4. Surface Area	1. Human Digestion 2. Ruminant Digestion 3. Benedicts Test 4. Life Processes