

Framework Biology 7

An Inquiry Based Science Teaching and Learning Framework

Discover
SENSORS
Supporting inquiry based
teaching and learning

Topic/Learning Activity

Food OB1 - OB5

Student Cohort

Student Level

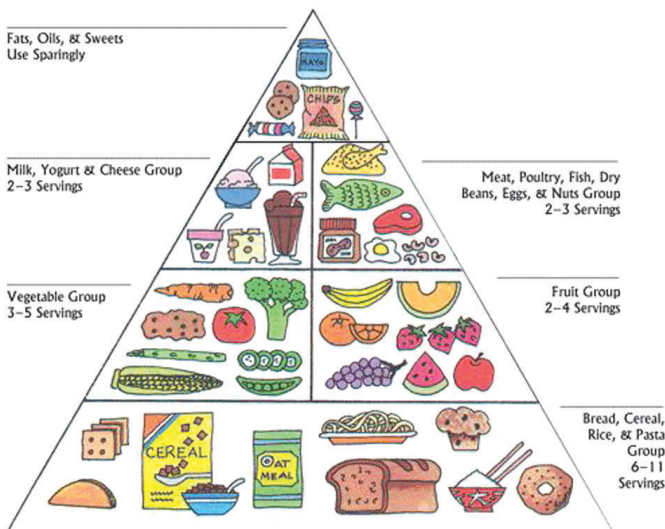
1st year mixed ability

Prior Knowledge

Energy. Diet and healthy eating

Stimulus to Engage

- Photos of food - good v junk
- Supersize Me movie
- Michael Phelps diet - Discover Senors website
- Students keep a food diary
- Reading food labels



Science Questions

- Initial questions I
- Why are some foods called “junk”?
- What is meant by a “high energy drink”?
- Does everybody need the same type and amount of food?
- What food is best for athletes?
- Why do we need to drink water and fluids?
- How often should we eat? Dogs are usually fed only once a day.
- How could we measure the energy in food?
- How could we find out what things are in food?

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Learning Outcomes

Content Knowledge

As per syllabus

Process

- Measuring, fair testing, interpreting food labels, presenting data, carrying out investigations – food tests and showing food contains energy

Skills

- Communication of results
- Creative thinking – designing investigations
- ICT – using sensors, accessing websites, spreadsheets for data
- Applying knowledge to self – diet

Questions during Activity

Questions to drive student learning (directing them to the learning outcomes):

- Are students aware of the different chemicals used for food tests?
- Can you design fair tests for finding the energy in different foods?

Questions to probe understanding:

- Compare diets of different classes of people
- Why some foods are classed as junk
- Look again at Michael Phelps diet
- How does the “burning food” experiment show how much energy a food has?
- What do we mean by a fair test?

Questions to get students thinking about their own learning (metacognition):

- List the contents of lunch you would have for a 7 year old girl
- List the contents of lunch you would have for a 70 year old retired person
- List the contents of lunch you would have for a professional footballer
- What food would you advise for a person with osteoporosis?
- What food would you advise for a person with anemia?

Developing the Activity

How do you stimulate students to ask even more questions/think further?

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- Can a food have more than one food type?
- If we are using chemicals to test food, what has to be special about these chemicals.
- Keep a food log for a week. Also keep activity log. Look at intake and energy conversion.
- Give a pot of food with many food types. Can we use food tests to work out what the mix contains?



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Possible supporting activities:

- Look at the area of additives. Effects on people - hyperactivity, etc.
- Investigate "high energy drinks" e.g Red Bull
- What are isotonic drinks?

Questions for supporting activities:

- How would we investigate the claims of high energy drinks?
- Design a snack for a marathon runner to be taken during the race.
- Which foods make you feel fuller for longer?



Reflecting back to Learning Outcomes

- How many of your intended outcomes were achieved?

Most of the outcomes were achieved. Students enjoyed working groups. There was very good discussion and debate about food and diet. They asked very interesting questions. They found the connection between science and themselves good. They enjoyed doing the food tests and planning the food energy investigation. Liked using the dataloggers to measure temperature.

- Do any of your intended outcomes need to be revised?

No great problems. Some find dealing with numbers and maths difficult.

Additional Resources

Stimulus materials, websites, etc.:

Food wrappers

GI index Google

Bord Bia website <http://www.bordbia.ie/aboutfood/nutrition/pages/default.aspx>

Kellogs website - excellent <http://www.kelloggs.ie/>

How has the use of ICT enhanced the learning?

Evidence of enhancement:

Researching websites

Using temp. Probes

Calculating various indices

Food pyramid animations.

Additional Comments

Excellent area to show that doing science has real life connections. We can gather evidence to create a good way of living for ourselves. Allow student to control something based on their own research and findings.