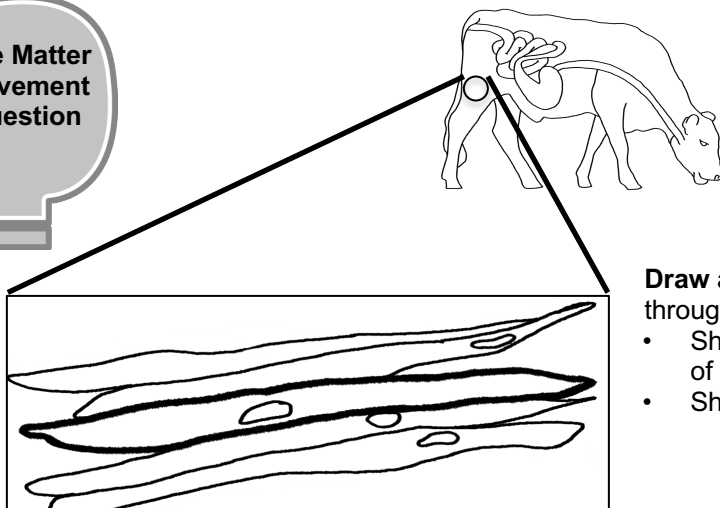


4.2 Explanations Tool: How does a cow's muscle cell use food for energy to move and function?

The Matter
Movement
Question



Draw and label arrows that show molecules moving into, through, and out of a muscle cell in a cow's leg.

- Show molecules with carbon atoms moving into and out of the cell.
- Show other relevant molecules.

The Matter
Change
Question

Name the chemical change that allows cells to move and function:
Write the chemical equation for this change:

What molecules are carbon atoms in before the chemical change?

What other molecules are needed?

Chemical
Change

What molecules are carbon atoms in after the chemical change?

What other molecules are produced?

The Energy
Change
Question

What forms of energy go into this chemical change?

Energy
Transformation

What forms of energy go into this chemical change?

What forms of energy come out of this chemical change?

Explain in words: How does a cow's muscle use food for energy to move and function? (Answer on the back).

Use this Explanations Tool to help guide your written explanation, being sure to answer the Three Questions.

Remember: **Atoms last forever** (so you can arrange atoms into new molecules, but can't add or subtract atoms).
Energy lasts forever (so you can change forms of energy, but energy can't appear or go away).