

Chapter 1: Biology in the 21st Century

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1.1 and 1.2 The Study of Life and Biology

What is biodiversity?

I. Earth is home to an incredible diversity of life (**biodiversity**).

Where is the biosphere?

What defines a species?

A. **Biosphere** – all the places on Earth where all living things are

Yellow means that this is one of the vocab words found in the chapter



Source: novenature.world

B. All of us are examples of different **species** – living things that can reproduce with one another

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II. All organisms share certain characteristics.

What characteristics do all living things share?

What does Biology mean?

A. **Biology** – (*bios* “life”; *-ology* “study of”) the scientific study of all forms of life.

THINK-WRITE-PAIR-SHARE: What topics might be included in the study of Biology?



Source: MS clipart

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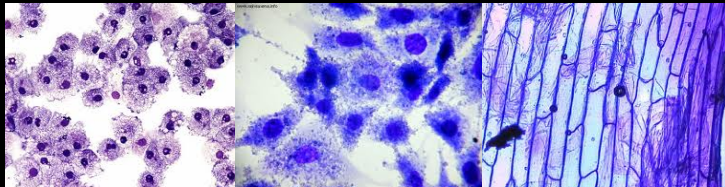
What makes something alive?

Why are cells considered the basic unit of life?

B. Living things share the following characteristics:

1. **made of one or more cells** – the basic unit of life

Green means that this is one of the chapter's key concepts



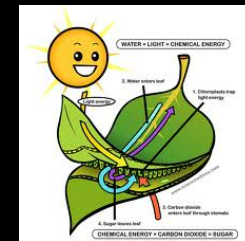
Source: grauhall.com

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What is metabolism?

2. all living things **obtain and use materials and energy** to grow, develop and reproduce through a series of chemical reactions called **metabolism**

THINK-WRITE-PAIR-SHARE: What kind of processes are involved in metabolism?



Source: agostonsanimals.com; cliparts.com

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- What would happen is an organism did not respond to changes in the environment?
- organisms must **react and respond to their environment to survive**
 - maintain **homeostasis** - a **constant internal environment**

How do we maintain homeostasis if we are too hot, or cold, or thirsty?



Source: clipart.com; slideshare.net

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- reproduce** a new organism

What is the purpose of reproduction?

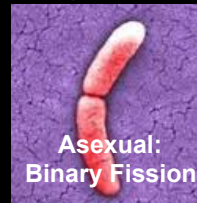
- sexual**: two different parents combine cells to produce new organism
- asexual**: a single parent produces offspring identical to itself

What types of reproduction are these?

Asexual: Budding



Source: biology.about.com



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- What does DNA stand for?
- Why must all living things have DNA?
- all organisms store information in **genetic material** called **DNA (deoxyribonucleic acid)**, so that they can live, grow and reproduce



Source: 3DScience.com

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- over time have changes in their DNA** called **evolution**

What is evolution?

How does evolution occur?

THINK-WRITE-PAIR-SHARE:

Is this a good example of evolution?

Going Mobile | The evolution of the cellphone

