🐾 Lesson Plan: Animal Growth and Reproduction

Grade Level: 4
Subject: Life Science
Duration: 45–60
NGSS 4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

🎯 Learning Objectives

By the end of this lesson, students will be able to:

- **Define** the stages of animal growth including embryonic, juvenile, and adult stages
- **Differentiate** between complete and incomplete metamorphosis using insect life cycles as examples

🧰 Materials Needed: (all links are included in this PDF)

- Study Guide - Animal Growth and Reproduction (https://newpathworksheets.com/api/guide/study-guide-science-grade-4-animal-growth-and-reproduction.pdf)
- Activity Lesson - Frog & Butterfly Life Cycles (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-4-animal-growth-and-reproduction-animal-growth-reproduction-4.pdf)

- Worksheet 0 - Concepts & Definitions (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-animal-growth-and-reproduction-0.pdf)
- Worksheet 1 - Metamorphosis Quiz (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-animal-growth-and-reproduction-1.pdf)
- Vocabulary Worksheet 1 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-animal-growth-and-reproduction-1.pdf)

Lesson Procedure

Step 1: Introduction (5 minutes)

- Ask students: 'How does a caterpillar turn into a butterfly? Do they look the same when they are born as when they are adults?'

growth-and-reproduction-1.pdf)

- Review the answers as a class, ensuring students understand the difference between biological traits and learned behaviors.

Step 4: Independent Practice (10 minutes)

- Hand out the Activity Lesson worksheets. Students will sequence the stages of the frog and butterfly life cycles and match young animals to their adult forms. (https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-4-animal-growth-and-reproduction-animal-growth-reproduction-4.pdf)

- Ask students to label the stages (egg, larva/tadpole, pupa/froglet, adult) on their diagrams.

Step 5: Assessment (5 minutes)

- Administer Worksheet 0 as a quiz to assess understanding of life cycles, fertilization, and metamorphosis types. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-animal-growth-and-reproduction-0.pdf)
- For extra credit or homework, students can complete Worksheet 1 regarding specific developmental stages. (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-animal-growth-and-reproduction-1.pdf)

Differentiation Strategies

For advanced learners:

- Research an animal with a unique gestation period or life cycle (e.g., marsupials or

Complete List of Available Resources:

- NewPathWorksheets: Animal Growth and Reproduction Topic Page (https://newpathworksheets.com/science/grade-4/animal-growth-and-reproduction)
- Worksheet 2 - Additional Practice (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-animal-growth-and-reproduction-2.pdf)
- Worksheet 3 - Additional Practice (https://newpathworksheets.com/api/worksheet/worksheet-science-grade-4-animal-growth-and-reproduction-3.pdf)

- Vocabulary Worksheet 2 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-animal-growth-and-reproduction-2.pdf)
- Vocabulary Worksheet 3 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-animal-growth-and-reproduction-3.pdf)
- Vocabulary Worksheet 4 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-animal-growth-and-reproduction-4.pdf)
- Vocabulary Worksheet 5 (https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-4-animal-growth-and-reproduction-5.pdf)

ANIMAL GROWTH AND REPRODUCTION

Life Cycles

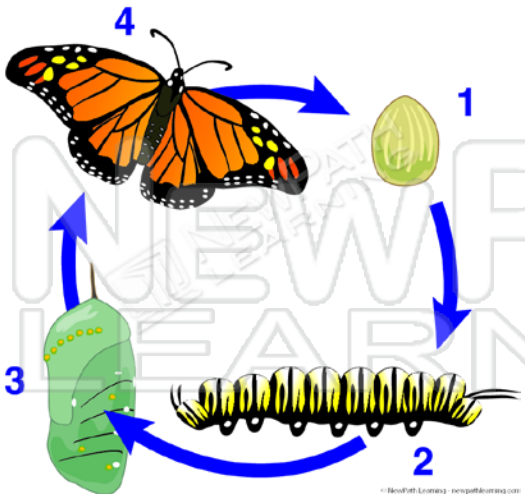
A **life cycle** is the stages of development an organism goes through starting from an **egg** to growing into an **adult**. Living organisms each have their own unique way of reproducing, giving birth, growing, and developing.

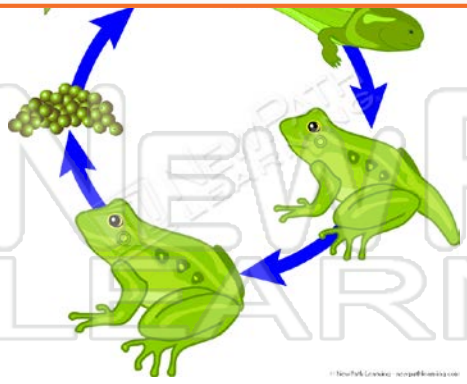
Organisms such as mammals and birds have simple life cycles. These organisms look similar to their parents when they are born. Many organisms, however, have complex life cycles and do not look like their parents when they are born.

Lesson Checkpoint:
What is a life cycle?

Lesson Checkpoint:
What are the three stages of development in incomplete metamorphosis?

Organisms that go through **complete metamorphosis** go through four stages of development while include: egg, larva, pupa, and adult.





Reproduction

Organisms also reproduce in several different ways. **Reproduction** is the creation of a **new individual** or individuals from existing individual or individuals.

Fertilization

Fertilization is the **union** of a male sperm and a female egg to form an offspring. This is one way animals reproduce. Internal fertilization takes place **inside** an organism.

Fertilization does NOT need to take place in every organism in order for reproduction to occur. A **single** individual can produce offspring without fertilization from another organism without fertilization taking place. This is called **asexual reproduction**.

Some animals develop inside the parent organism, as in those who have live

If a piece of a parent is **detached**, and it can grow and develop into a completely new individual, this process is known as **regeneration**. Some types of worms and starfish can regenerate in this way.

Lesson Checkpoint:
What are two ways an organism can reproduce asexually, without fertilization occurring?

Traits

Animals have both inherited and acquired traits. An **inherited trait** is a characteristic or quality that an organism is born with. An **acquired trait** is a trait one learns through its experiences but is not born with.

Heredity is the passing of traits and characteristics from parents to their offspring.

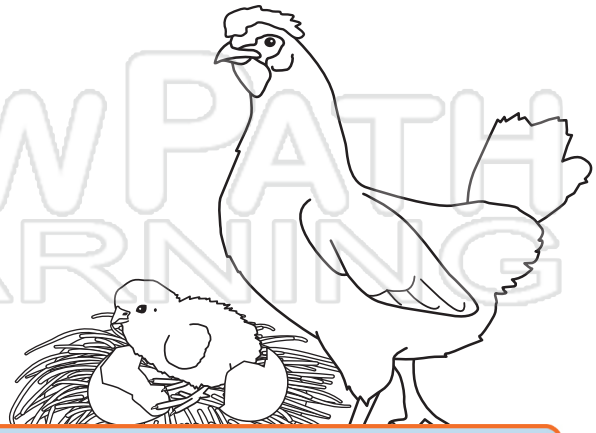
Lesson Checkpoint:
What is the difference between an acquired and inherited trait?

Animal Growth & Reproduction

Sci D

Name _____ Class _____ Date _____

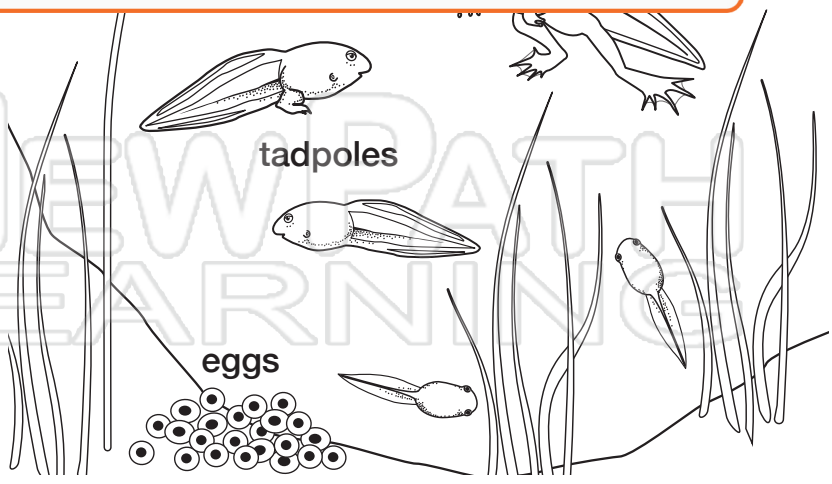
Animals produce **offspring** in a variety of ways. Many animals have **live births**. The offspring develops inside the female parent which gives birth to the live young. Other organisms **lay eggs** instead of having live births.



Ampl ...eturn to the ...w.

Frog ...

1. Fr...
2. Fr... ta... gi...
3. The **froglet** still has part of its tail and starts to breathe using its **lungs**.
4. By the time a froglet becomes an **adult**, its tail is reabsorbed.



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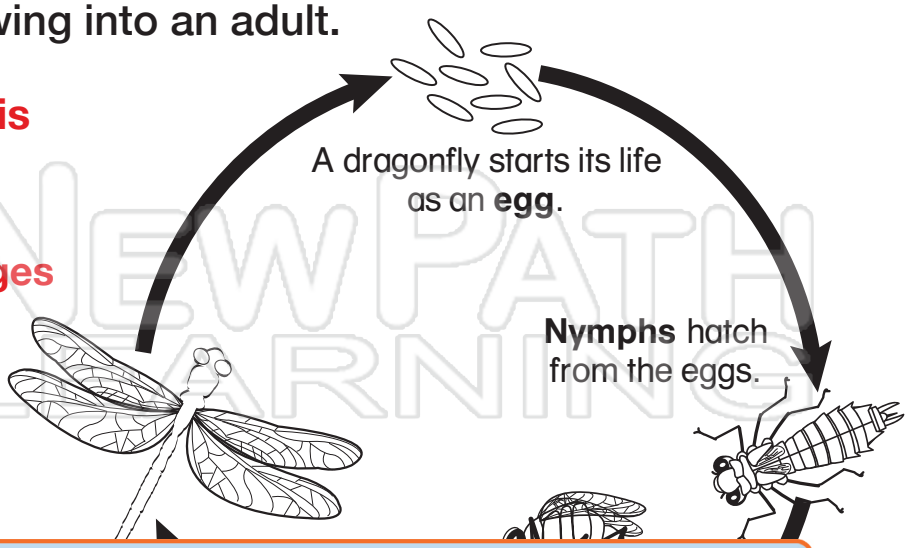
Metamorphosis is the process of a change in the appearance and form of some animals while growing into an adult.

Incomplete Metamorphosis

Dragonflies go through incomplete metamorphosis. This life cycle includes **3 stages** of development: **egg**, **nymph** and **adult**.



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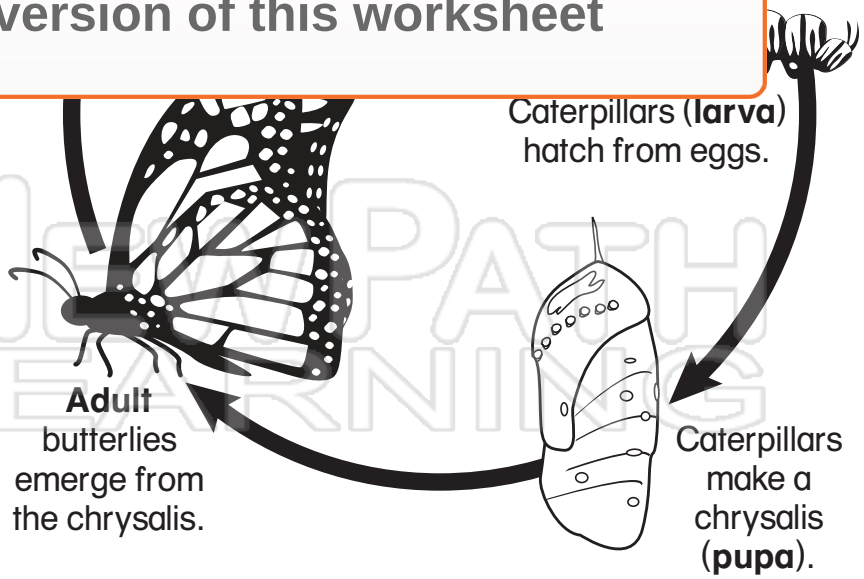

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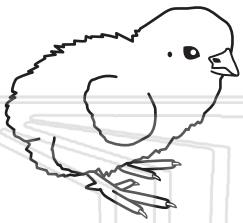
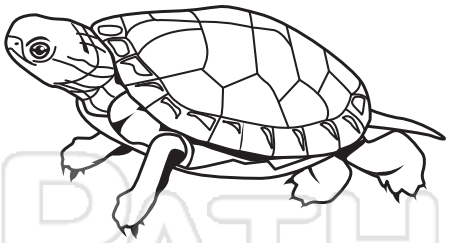
Name _____ Class _____ Date _____

Draw a line to match each young animal to an adult.





PREVIEW

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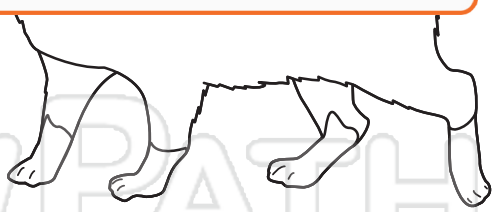

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Name _____ Class _____ Date _____

Number the frog cycle stages. Fill in the blanks.

A frog starts it's life as an _____.

_____ grow into _____ frogs.

_____ grow legs and become _____.

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Name _____ Class _____ Date _____

Number the life cycle stages. Fill in the blanks.

A butterfly starts it's life as an _____.

_____ butterflies emerge from the _____.

make a chrysalis (_____).

Butterflies undergo _____ **metamorphosis**, which has _____ stages. Other insects only have _____ life stages, which is called _____ **metamorphosis**

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Answer Key

Draw a line to match each young animal to an adult.

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Answer Key

Number the frog cycle stages. Fill in the blanks.

1

A frog starts it's life as an ___egg___.

2

___Froglets___ grow into ___adult___ frogs.

___Tadpoles___ grow legs and become ___froglets___.

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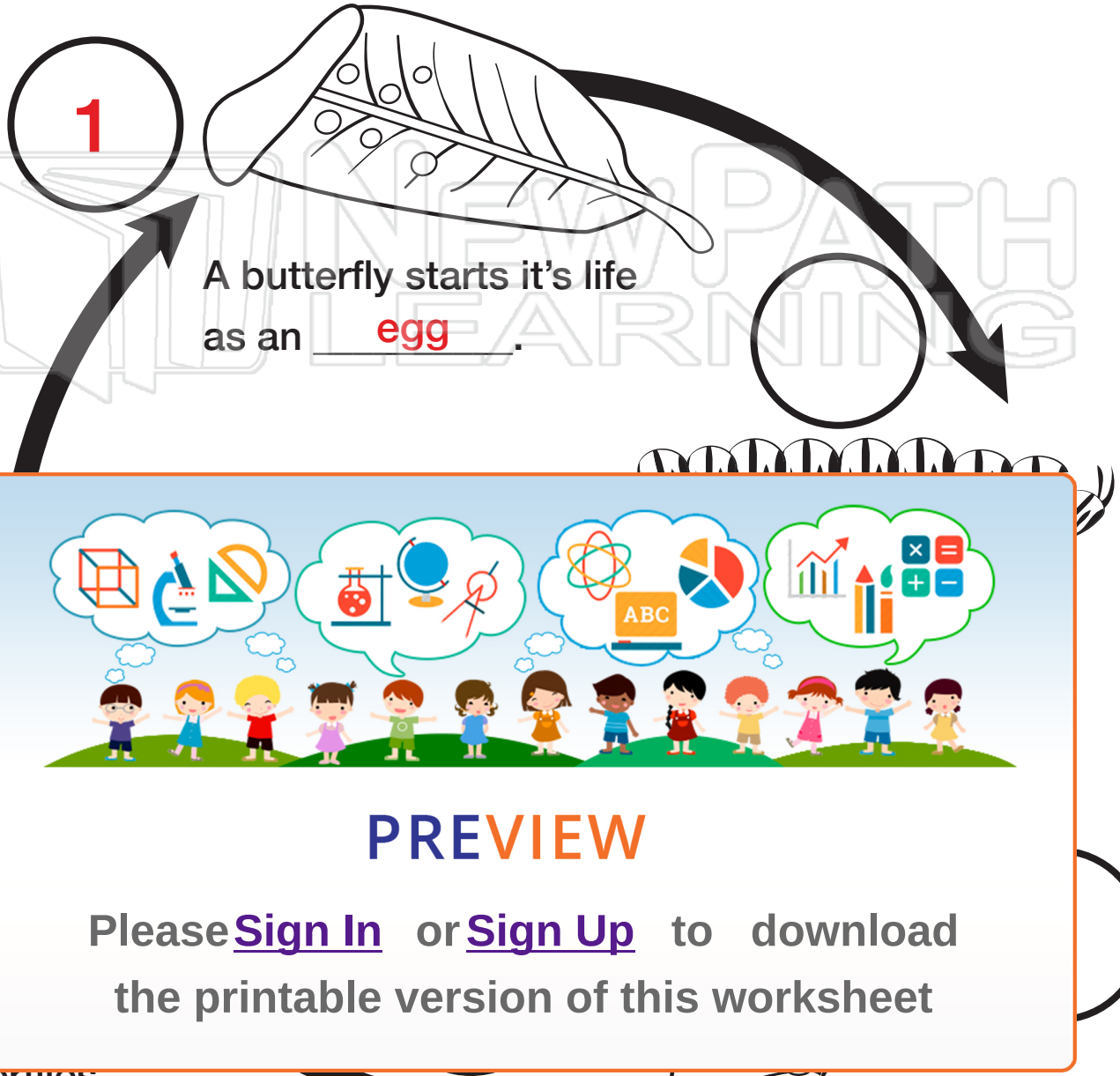
Answer Key

Number the life cycle stages. Fill in the blanks.



A butterfly starts it's life as an _____egg_____.

_____ butterflies emerge from the _____chrysalis_____.

make a chrysalis (_____pupa_____).

Butterflies undergo _____complete_____ **metamorphosis, which has** _____4_____ **stages. Other insects only have** _____3_____ **life stages, which is called** _____incomplete_____ **metamorphosis**

Animal Growth and Reproduction

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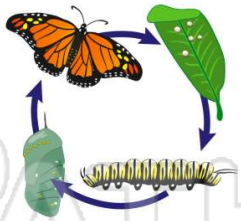
Name_____ Class_____ Date_____

1 The **stages of development** an organism experiences as it moves from birth to adulthood or maturity is called _____.

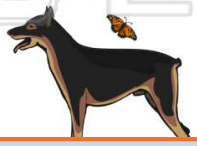
A fertilization
B preservation
C its life cycle
D regeneration

2 All **organisms** have the same **life cycle**.
True or false?

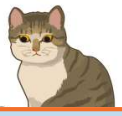


A true
B false

3 Organisms such as mammals and birds have simple life cycles; they look similar to their parents when they are born. Which of these organisms looks **similar** to its parents when born?



4 Many organisms have complex life cycles and do not look like their parents when they are born. Which of these organisms looks totally **different** from its parents when born?



A bird

5

7

C The female lays an egg.
D The organism reaches an adult size.

metamorphosis
C half metamorphosis
D no metamorphosis

9 Organisms that go through **complete metamorphosis** go through **four stages** of development. In **order**, these are _____.

A egg, adult, larva, and nymph
B pupa, egg, nymph, and adult
C egg, larva, pupa, and adult
D nymph, pupa, egg, and adult

10 **Butterflies** go through _____ metamorphosis.

A complete
B incomplete
C half
D no

Animal Growth and Reproduction

Sci D

Name_____ Class_____ Date_____

1 The **stages of development** an organism experiences as it moves from birth to adulthood or maturity is called _____.

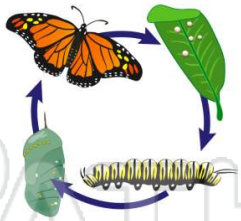
A fertilization
B preservation
C its life cycle
D regeneration

C

2 All **organisms** have the same **life cycle**.

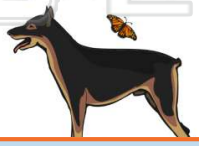
True or false?

A true
B false



B

3 Organisms such as mammals and birds have simple life cycles; they look similar to their parents when they are born. Which of these organisms looks **similar** to its parents when born?



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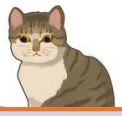

A bird

C

5

A

7

C The female lays an egg.
D The organism reaches an adult size.

A

metamorphosis
C half metamorphosis
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9 Organisms that go through **complete metamorphosis** go through **four stages** of development. In **order**, these are _____.

A egg, adult, larva, and nymph
B pupa, egg, nymph, and adult
C egg, larva, pupa, and adult
D nymph, pupa, egg, and adult

C

10 **Butterflies** go through _____ metamorphosis.

A complete
B incomplete
C half
D no

A

Animal Growth and Reproduction

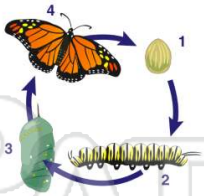
Sci D

Name_____ Class_____ Date_____

1 What is the **first** stage of **complete metamorphosis**?

A female lays eggs
B larva
C pupa
D adulthood

2 On the diagram, what is the butterfly's **developmental** stage labeled **#2**?



A egg
B adult
C pupa
D larva

3 During the _____ stage of a butterfly's life cycle, a larva makes a **cocoon** around itself. Inside, it transforms into its adult shape.

A adult
B pupa

4 During the _____ stage of a butterfly's development, the **full-grown** butterfly breaks out of its cocoon.

A larva
B pupa
C adult

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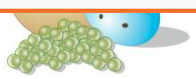
5

7

D dolphin



9 In order to be **born**, all organisms come from a parent. The whole process of **offspring** coming from parents is called _____.

A growth
B babies
C reproduction
D metamorphosis

10 When a male **sperm** and a female **egg** meet to form an offspring, this is called _____.

A fertilization
B reproduction
C photosynthesis
D development

Animal Growth and Reproduction

Sci D

Name_____ Class_____ Date_____

1 What is the **first** stage of **complete metamorphosis**?

A female lays eggs
B larva
C pupa
D adulthood

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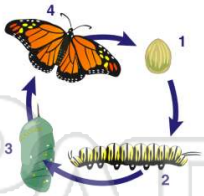


D

3 During the _____ stage of a butterfly's life cycle, a larva makes a **cocoon** around itself. Inside, it transforms into its adult shape.

A adult
B pupa

B

4 During the _____ stage of a butterfly's development, the **full-grown** butterfly breaks out of its cocoon.

A larva
B pupa
C adult

C

5

A

7

D dolphin

B

9 In order to be **born**, all organisms come from a parent. The whole process of **offspring** coming from parents is called _____.

A growth
B babies
C reproduction
D metamorphosis

C

10 When a male **sperm** and a female **egg** meet to form an offspring, this is called _____.

A fertilization
B reproduction
C photosynthesis
D development

A

Animal Growth and Reproduction

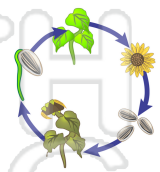
Sci D

Name_____ Class_____ Date_____

Match each of the following terms to its definition:

Animal	Life cycle	Acquired trait	Archaebacteria
Angiosperm	Autotroph	Algae	Budding

1. - the stages of development an organism goes through starting from an egg and growing into an adult



2. - a trait one learns but is not born with

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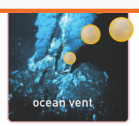
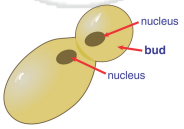
nucleus, some make their own food and some need to obtain food from other sources; often found in harsh environments



7. - a living organism, such as algae, that is capable of producing its own food; also called a producer

8. - the process of an offspring growing out of the body of the parent; for example, a yeast cell



Animal Growth and Reproduction

Sci D

Name_____ Class_____ Date_____

Match each of the following terms to its definition:

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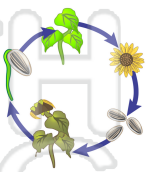
1. life cycle - the stages of development an organism goes through starting from an egg and growing into an adult



2. acquired trait - a trait one learns but is not born with

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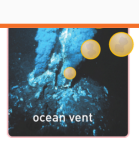
nucleus, some make their own food and some need to obtain food from other sources; often found in harsh environments



7. autotroph - a living organism, such as algae, that is capable of producing its own food; also called a producer

8. budding - the process of an offspring growing out of the body of the parent; for example, a yeast cell