

Read the passage. Then answer the questions that follow.

Building a Vivarium

by Anna Lopez

1 A vivarium is a clever way to have a miniature ecosystem in your own home. The word *vivarium* means “place of life” in Latin. A vivarium is like an ecosystem in an enclosed space. An ecosystem is an environment of living things. The area includes plants and animals as well as materials such as rocks, soil, air, and water. Terrariums and aquariums are a type of vivarium. Terrariums contain only plant life. Aquariums contain fish and other water animals.

2 You can build your own desktop vivarium at home. With your vivarium, you can observe small animals such as ants and earthworms or larger animals such as lizards. You can build a vivarium of any size or shape out of many different materials. A glass or plastic box is a good choice because you will want to be able to see inside your vivarium. However, a wooden or metal box with glass or plastic on one side also works well.

3 The floor of a vivarium must be made of a substrate that will support whatever will live in it. Some substrates include soil, pebbles, sand, peat, wood chips, or vegetable matter such as corn or coconut husks. The substrate will help control the moisture in the small new world. It will also give the animals that live there something to live on and dig in.

4 Other things to consider when planning a vivarium are lighting, temperature, and ventilation. You need to make sure the lighting and temperature are appropriate for the species that will live in the space. For instance, earthworms live largely below ground, so they do not need much light. Lizards need heat rocks or heat lamps because they are cold-blooded. Proper ventilation will keep the air moving and prevent mold from growing. All these elements will help the animals in a vivarium stay healthy.

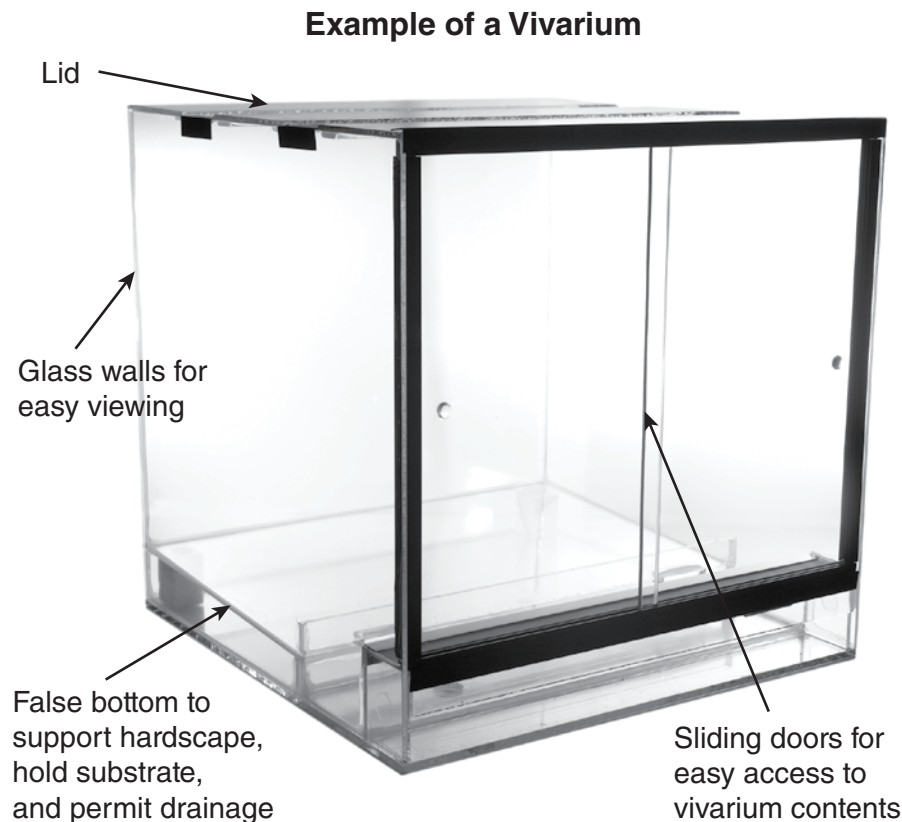
5 When you are ready to build your vivarium, first decide what plants and animals you want to live there. Make sure they can all live in the same environment. For example, a desert plant will not do well in the same conditions that a frog needs to thrive. Desert plants are accustomed to dry conditions, but frogs need lots of moisture. With such things in mind, buy a suitably sized container. Consider how large your plants and animals might get.

6 Once you’ve decided on the plants and animals, start building the environment for the vivarium. Your environment will need a background and a hardscape. For the background, be creative. It can be anything you can dream up to look like the living area you have chosen to model. A hardscape is an artificial surface that will support and contain the substrate on which your plants and animals will live. Make sure that any glue and other products you use will not harm your plants and animals.

7 A vivarium with lots of water and plants will probably need a false bottom beneath the hardscape. A false bottom raises the bottom layer of the environment above the bottom of the container. This creates a space for drainage and prevents the soil and plants on the bottom of the vivarium from becoming waterlogged. A false bottom should be made of a permeable material, which water can flow through.

8 Next, build a top, or lid. You will need to determine how much light and moisture your vivarium will require. Your lid can be made of screen, glass, plastic, or any other material. Be sure you can easily lift the lid to reach the life inside.

9 If your lid is not clear, you will need to install a light inside the vivarium. Plants and animals require light to remain healthy. At this point, you can add thermometers, heaters, and other instruments needed to keep your vivarium safe and healthy for its inhabitants.



10 This is when you add whatever substrate you've chosen for the bottom of your vivarium. And, if your vivarium requires it, add water. Make sure the water is not treated with chemicals. Once you have added the substrate and water, turn on all lights and monitors and let this new environment "settle" for at least a day or two.

11 After the environment has stabilized, it's time to add your plants and animals. Add them slowly so they have time to adjust to their new home. Remember to feed any animals you place in your vivarium.

12 A final tip: Don't overfill your vivarium! Be sure to leave room for the plants and animals to grow. Remember that after a few weeks of growing, your vivarium will mature, or fill in. A mature vivarium looks quite different from a brand new one! Part of the reward of having a vivarium is watching all the growth and change of the life forms within.

Go On

38 What purpose do paragraphs 1–4 have in the passage?

- A** They give a list of facts about various kinds of vivariums and what can live in them.
- B** They present useful information about the planning stage of a vivarium.
- C** They offer helpful ideas for designing the background and hardscape of a vivarium.
- D** They provide all necessary instructions for the building stage of a vivarium.

39 Read this sentence from paragraph 6 of the passage.

For the background, be creative.

What does the word “creative” suggest about designing the background of a vivarium?

- A** Much preparation may be involved in the design.
- B** Some imagination may be involved in the design.
- C** The design should be simple.
- D** The design should be elaborate.

40 What additional information about vivariums can be gained from the labeled diagram?

- A** A person can reach inside a vivarium from a side wall, not only from a top lid.
- B** A person can see inside some vivariums from all four sides of the container.
- C** A vivarium needs a false bottom, which sits above the bottom of the container.
- D** Some vivariums use pebbles for substrate, while others use peat or wood chips.

41 The author thinks that vivariums provide enjoyment as well as a learning experience. Which sentence from the passage **best** supports this statement?

- A** “Remember to feed any animals you place in your vivarium.”
- B** “With your vivarium, you can observe small animals such as ants and earthworms or larger animals such as lizards.”
- C** “Part of the reward of having a vivarium is watching all the growth and change of the life forms within.”
- D** “A vivarium is a clever way to have a miniature ecosystem in your own home.”

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Read these words from paragraph 12 of the passage.

A final tip: Don't overfill your vivarium!

Why did the author probably include this information?

- A** Vivariums are usually too large for the plants and animals they contain.
- B** Vivariums cannot thrive if the plants and animals they contain are too small.
- C** People new to building vivariums don't know which plants and animals to include.
- D** People new to building vivariums are tempted to load them with plants and animals.

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Which idea would **not** be appropriate in a summary of the passage?

- A** Terrariums are a kind of vivarium, but they contain only plant life.
- B** With a vivarium, you can observe plants and animals living in a supportive environment.
- C** Decide on features such as lighting, temperature, and ventilation before you begin to build a vivarium.
- D** Constructing a vivarium involves a container, hardscape, background, substrate, lid, and false bottom.

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