

# Directed Reading

## Section: Air Masses

Use the terms from the following list to complete the sentences below. Each term may be used only once.

high pressure

poles

low pressure

equator

wind patterns

air pressure

1. Differences in \_\_\_\_\_ are caused by unequal heating of Earth's surface.
2. The region along the \_\_\_\_\_ receives more solar energy than the polar regions do.
3. Heated equatorial air rises and creates a center of \_\_\_\_\_.
4. Cold air near the poles sinks and creates centers of \_\_\_\_\_.
5. Differences in air pressure at various locations on Earth create \_\_\_\_\_.

### HOW AIR MOVES

- \_\_\_\_\_ 6. Air moves from
  - a. east to west.
  - b. west to east.
  - c. areas of high pressure to areas of low pressure.
  - d. areas of low pressure to areas of high pressure.
- \_\_\_\_\_ 7. There is a general, worldwide movement of air from the
  - a. equator toward the poles.
  - b. poles toward the equator.
  - c. Northern Hemisphere to the Southern Hemisphere.
  - d. Southern Hemisphere to the Northern Hemisphere.

Directed Reading *continued*

**FORMATION OF AIR MASSES**

8. What happens to the air when the air pressure differences are small?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

9. What is an air mass?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. What are the characteristics of air masses that form over polar areas?

\_\_\_\_\_

\_\_\_\_\_

11. What are the characteristics of air masses that form over tropical oceans?

\_\_\_\_\_

\_\_\_\_\_

**TYPES OF AIR MASSES**

\_\_\_\_\_ 12. Air masses are classified according to their

- a. destination region.
- b. source region.
- c. polar region.
- d. tropical region.

\_\_\_\_\_ 13. Cold air masses come from

- a. polar areas.
- b. tropical areas.
- c. equatorial areas.
- d. temperate areas.

\_\_\_\_\_ 14. Warm air masses come from

- a. arctic areas.
- b. temperate areas.
- c. tropical areas.
- d. polar areas.

\_\_\_\_\_ 15. What are air masses that form over the ocean called?

- a. oceanic
- b. maritime
- c. continental
- d. dry

**Directed Reading *continued***

16. Air masses that form over land are called

- a. wet.
- b. maritime.
- c. grounded.
- d. continental.

17. Name three large landmasses over which continental air masses form.

---

---

---

18. What weather conditions do continental air masses generally bring when they move into a region?

---

---

19. Name and describe the two types of continental air masses.

---

---

---

20. How do air masses that form over the ocean differ from continental air masses?

---

---

21. What weather conditions do maritime air masses generally bring when they travel to a new location?

---

---

22. Name and describe the two types of maritime air masses.

---

---

---

---

Directed Reading *continued*

**NORTH AMERICAN AIR MASSES**

23. List the four types of air masses that affect the weather of North America, and list their six source locations.

---

---

---

---

---

---

---

---

24. What type of weather does an air mass usually bring?

---

---

25. What may happen to an air mass as it moves away from its source region? Give an example.

---

---

---

---

---

26. What develops when cold, dry air becomes warm and moist?

---

---

27. Describe the weather brought to the eastern United States by maritime tropical air masses that form over the tropical Atlantic Ocean.

---

---

---

---

---

Directed Reading *continued*

28. How does the weather brought to the Pacific coast of the United States by maritime tropical air masses that form over the tropical Pacific Ocean differ between the summer and the winter?

---

---

---

---

29. Explain where continental polar air masses generally originate, where they move, and the type of weather they bring.

---

---

---

---

30. Describe maritime polar air masses that form over the North Pacific Ocean and the type of weather they bring.

---

---

---

---

---

31. How do continental polar Canadian air masses differ from the polar air masses that form over the North Pacific Ocean?

---

---

32. How do maritime polar Atlantic air masses differ in movement and weather conditions from the maritime Pacific air masses?

---

---

---

---

