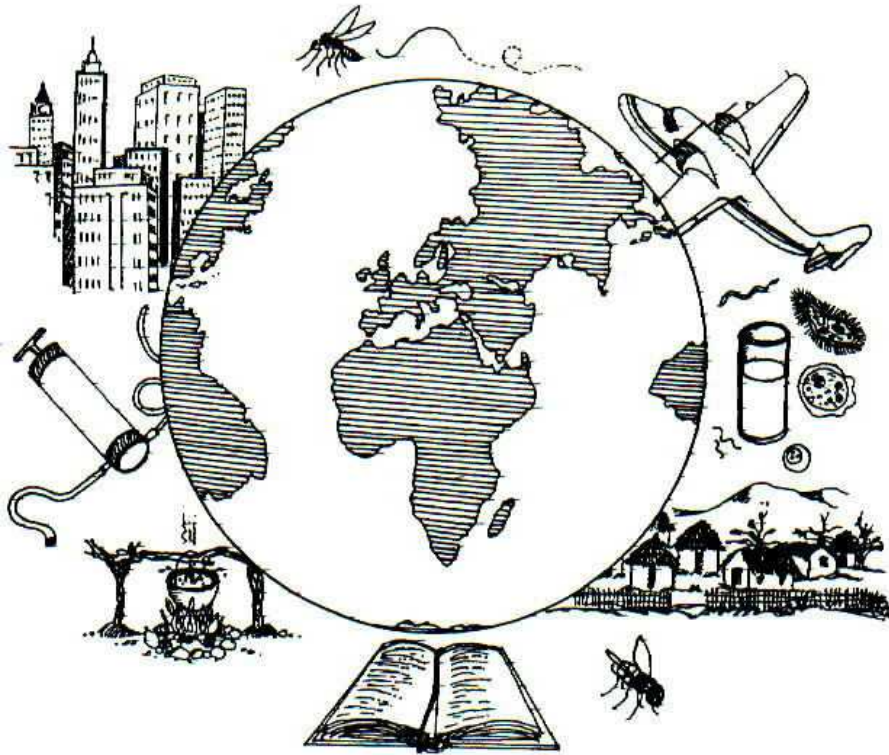


Water Purification

Appropriate Technology



Workbook

Name: _____

Read section I on page 2 of the Training Pac

Fill in the blanks

1. Clean water is necessary for _____.
2. How much of the earth's water supply is contaminated? _____
3. Why do some people get sick? _____
4. You can _____ water and make it safe.
5. Village water supplies can be easily contaminated by _____ water.
6. What has caused many travelers and oversea missionaries needless sickness and disease? _____
7. A _____ missionary is a useful missionary.

Write true or false on each blank

8. _____ If the water is clear it is safe to drink.
9. _____ The colder the water, the easier it may be to purify
10. _____ Tap water from a contaminated source is safe to drink.
11. _____ Animals and latrines (toilets) must be kept away from water supplies.
12. _____ People should be taught good water sanitation and hygiene rules.

Score exercises 1 – 12

Read section II on page 3 of the Training Pac

Fill in the blanks

13. Illnesses that enter the body through unclean water are called _____ .
_____.
14. Name six (6) water-borne illnesses mentioned in this unit.
(a) _____ (d) _____
(b) _____ (e) _____
(c) _____ (f) _____
15. What are 2 ways we can avoid the diseases mentioned above? (3 possible answers)
(a) _____
(b) _____

Score exercises 13 - 15

Read section III on page 4 of the Training Pac

Fill in the blanks

16. What are the three questions we must ask ourselves when checking water sources?
- (a) _____
(b) _____
(c) _____
17. Some common water sources are
- (a) _____ (f) _____
(b) _____ (g) _____
(c) _____ (h) _____
(d) _____ (i) _____
18. If the water is contaminated we must find the source of contamination and _____ the _____ before the water is used.
19. What is a deep well? _____
20. _____ Well water should be tested for harmful bacteria or ameobas (True or False)
21. _____ All chlorinated public water supplies are safe to drink. (True or False)
22. _____ Always be certain that the _____ you will use is free from contamination and disease.
23. "When in doubt ... _____."

Score exercises 16 – 23

Read section IV on page 5 of the Training Pac

Fill in the blanks

24. What are the nine sources of contamination listed.
- (a) _____ (f) _____
(b) _____ (g) _____
(c) _____ (h) _____
(d) _____ (i) _____
(e) _____

25. How far away from water supplies must bathing areas, animals, and latrines be?

26. Into what two groups can these sources be divided?
(a) _____ and (b) _____
27. Chemical contaminants may not be easily _____.
28. Biological sources of contamination can usually be traced to what two things?
(a) _____
(b) _____
29. After locating the source of contamination what can now be found?

30. What is our goal? _____
31. _____ When traveling in other countries or cultures it is very important not to offend the people. (True or False)
32. Water purification is _____ way to live clean, healthy, and productive _____.

Score exercises 24 – 32

DO NOT look back at the Training Pac while completing the Review.

REVIEW #1
(4 points each answer)

Draw a line under the correct answer

1. Clean water is necessary for (life, pets, disease).
2. How much of the earth's water supply is contaminated? (1/4, 3/5, 2/3)
3. A (sick, dead, well) missionary is a useful missionary!
4. Water-borne illnesses enter the body through (warm, clean, unclean) water.
5. A well that is more than 100 feet deep is called a (shallow, safe, deep) well.
6. Always be certain the (glass, food, water) you will use is free from contamination and disease.
7. When in doubt... (DO, DON'T, DREAM)!
8. (Biological, Fast, Chemical) contaminants may not be easily stopped.
9. Our (problem, goal, gold) is pure, safe water.
10. Water purification is (satan's, God's, no) way to live clean , healthy, and productive lives.

Answer the following questions

11. What has caused many overseas travelers and missionaries needless sickness and disease? _____
12. How do you make contaminated water safe to drink? _____

13. Name the six water-borne illnesses mentioned in this Training Pac.
(a) _____ (d) _____
(b) _____ (e) _____
(c) _____ (f) _____
14. What are the two ways the diseases mentioned above can be avoided?
(a) _____
(b) _____
15. What are the three questions we must ask ourselves when checking water sources?
(a) _____
(b) _____
(c) _____

True or False

16. People must be taught good water sanitation and hygiene rules. _____
17. Village water supplies cannot be contaminated by rain water. _____
18. The colder the water, the more difficult it may be to purify. _____
19. Clear water is always safe to drink if it is served in a clean glass. _____
20. We must purify contaminated water before it is used. _____
21. When traveling in other countries or cultures it is very important not to offend the people. _____
22. Poor sanitation is a chemical source of contamination. _____
23. Sometimes legal action must be taken to stop chemical contamination. _____
24. Water - borne illnesses are pleasant diseases for the human body. _____
25. Please list 5 of the nine sources of contamination.
(a) _____ (d) _____
(b) _____ (e) _____
(c) _____

Score exercises 1 - 25

Read section VI on page 6 of the Training Pac

Fill in the blanks

1. How do you remove sediment or floating matter from polluted water? _____

2. When using the boiling method, how many minutes must water boil vigorously?
 _____.
3. Keep clean water _____.
4. Water must be used within _____ hours.
5. The boiling water kills all water-borne diseases, viruses, and bacteria. (True or False) _____
6. The most common method uses (a) _____ or (b) _____.
7. Granulated forms of household bleach are _____.
8. If no chlorine smell is found in water, repeat dosage and wait another _____ minutes before using.
9. Using bleach/iodine chart on page 6. Complete the following chart.

Bleach/Iodine Purification Chart

Amount of Water	Amount of Chlorine bleach to add to:		Amount of tincture iodine 2% to add to:	
	Clear Water	Cloudy Water	Clear Water	Cloudy Water
1 quart				
1 gallon				
5 gallons				

10. What is another method of Chemical purification? _____
11. Bleach loses its strength overtime. (True or False) _____
12. When bleach is one year old _____ your dosage.

13. Bleach that is _____ years old should be thrown out.
14. Purification tablets are only good for _____ years.
15. Name 5 things a good water filter should remove.
(a) _____ (d) _____
(b) _____ (e) _____
(c) _____
16. Most filters remove only chemicals from the water. (True or False) _____
17. Water filters are more _____ than boiling or chemical methods.
18. Should you have replacement parts for your filter on hand when traveling outside the U.S.A.? _____ Why? _____

19. Filters vary in (a) _____ and (b) _____.
20. Your _____ may depend on this device.
21. If you are thirsty you may use filter on soda pop. (True or False) _____

Score exercises 1 - 21

REVIEW #2
(5 points each answer)

twenty
forty-eight

granulated
chlorine

bleach
two

1. _____ forms of household bleach are poisonous.
2. Purification tablets are only good for _____ years.
3. If no _____ smell is found in the water, repeat dosage and wait another twenty minutes before using.
4. Water must boil vigorously for _____ minutes when using the boiling method for purification.
5. Water must be used within _____ hours.
6. When _____ is one year old, double your dosage.

Fill in the blanks

7. Name 5 things a good water filter should remove.
 - (a) _____
 - (b) _____
 - (c) _____
 - (d) _____
 - (e) _____
8. Your _____ may depend on this device.
9. Most filters remove only _____ from the water.
10. Water filters are more _____ than boiling or chemical methods.
11. Fill in the missing facts on this chart.

Bleach/Iodine Purification Chart

Amount of Water	Amount of chlorine bleach to add to:		Amount of tincture iodine 2% to add to:	
	Clear Water	Cloudy Water	Clear Water	Cloudy Water
1 quart	3 drops		5 drops	10 drops
1 gallon		24 drops	(1/4 tsp.) 20 drops	
5 gallons	(3/4 tsp.) 60 drops	(1 1/2 tsp.) 120 drops		(2 1/2 tsp.) 200 drops

True or False

12. _____ The most common method of chemical purification uses bleach or iodine.
13. _____ Never cover clean water!
14. _____ The boiling method does not kill all water-borne diseases.
15. _____ Bleach loses its strength over time.
16. _____ Replacement parts for water filters are available in almost every country outside the U.S.A.
17. _____ All water filters are the same.
18. _____ You should strain water through paper towels, paper coffee filters several layers of clean white cloth to remove sediment before purifying.
19. _____ Some people cannot use iodine.
20. _____ Bleach that is two years old should be used immediately.

Score exercises 1 - 20

Read section VII on page 8 of the Training Pac
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Fill in the blanks

1. What are the ten common uses for purified water? (listed on page 8)
 - (a) _____
 - (b) _____
 - (c) _____
 - (d) _____
 - (e) _____
 - (f) _____
 - (g) _____
 - (h) _____
 - (i) _____
 - (j) _____
2. What are two of the common mistakes that can be made in one's daily task?
 - (a) _____
 - (b) _____
3. It's the little _____ that spoil the vine.

4. What are the four steps for sterilizing containers?

- (a) _____

- (b) _____

- (c) _____

- (d) _____

5. Water should only be kept for up to _____ hours.

6. After 48 hours this water can only be used for _____ purposes.

Score exercises 1 – 6

Read section VIII on page 9 of the Training Pac

Fill in the blanks

7. During an emergency _____ can be cut off or polluted.

8. Tap water that is cloudy or has an unusual odor can be presumed safe to drink
(True or False)

9. During an emergency all water for drinking and cooking must be _____.

10. A single person can use up to _____ of water per day.

11. List 3 emergency sources of water.

- (a) _____
- (b) _____
- (c) _____

12. What kind of containers are best for bottling your own water? _____

13. Old milk and juice containers are an excellent choice. (True or False) _____

14. Emergency water supplies must be tightly _____.

15. Check your water supplies every _____ months.

16. A clean water source means _____ living.

Score exercises 7 – 16

DO NOT look back at the Training Pac while completing the Review.

Review #3
(6 ½ points each answer)

1. List 6 common uses for purified water.
(a) _____ (d) _____
(b) _____ (e) _____
(c) _____ (f) _____
2. List four steps for sterilizing containers.
(a) _____

(b) _____

(c) _____

(d) _____

3. Water stored for immediate use should only be kept _____ hours.
4. It's the little _____ that spoil the vine.
5. A single person can use up to 5 gallons of water per day. (True or False) _____
6. Emergency _____ supplies must be tightly sealed.
7. List 2 emergency sources of water.
(a) _____
(b) _____

True or False

8. _____ Water supplies should be checked only when we feel like it.
9. _____ Old milk and juice cartons may crack or leak sooner.
10. _____ Tap water that is cloudy or has an unusual odor should be considered unsafe to drink.
11. _____ Water supplies should be checked every 6 months.
12. _____ During an emergency all water for drinking and cooking must be purified
13. _____ You can brush your teeth with unpurified water as long as you don't swallow it.
14. _____ Adding unclean ice to your beverage is dangerous.
15. _____ A clean water source means healthy living.

Score exercises 1 – 15

DO NOT look back at the Training Pac while completing the Pre-Test

STOP!

You must now prepare yourself for the Pre-Test. In your preparation, you may want to follow one or more of these suggestions:

1. Review the Objectives.
2. Reread each section of the Training Pac.
3. Relearn each section you do not understand.
4. Rewrite every incorrect exercises in this Workbook.
5. Review the Reviews.

PRE-TEST
(4 points each answer)

Draw a line under the correct answer

1. (Granulated, Powdered, Liquid) forms of household bleach are poisonous.
2. Water for immediate use must be used in (24, 36, 48) hours.
3. Water must boil vigorously for (20, 10, 50) minutes when using the boiling method for purification.
4. Most filters remove only dirt, microbes, chemicals) from the water.
5. Always keep clean water (boiling, covered, hot).
6. Diabetics and children cannot have (bleach, iodine, water).
7. When traveling in other countries it is important not to (befriend, offend, defend) the people.
8. Poor sanitation is a/an (chemical, industrial, biological) source of contamination.
9. Emergency water supplies should be checked every (6 months, 48 hours, 3 months).
10. During an emergency (some, all, dirty) water for drinking and cooking must be purified.

Fill in the blanks

11. Name 3 of the water-borne illnesses mentioned in this Training Pac.

(a) _____ (b) _____
(c) _____

12. What are the 3 questions we must ask ourselves when checking water sources?
- (a) _____
- (b) _____
- (c) _____
13. List 3 things a good water filter should remove.
- (a) _____
- (b) _____
- (c) _____
14. List 4 common uses for purified water.
- (a) _____ (c) _____
- (b) _____ (d) _____
15. List the four steps for sterilizing containers
- (a) _____
- _____
- (b) _____
- _____
- (c) _____
- _____
- (d) _____
- _____

True or False

16. _____ Clean water is necessary for life.
17. _____ A sick missionary is a useful missionary.
18. _____ Water-borne illnesses enter the body through unclean water.
19. _____ The colder the water, the easier it may be to purify.
20. _____ Bleach loses its strength overtime.
21. _____ It's the little foxes that spoil the vine.
22. _____ You can brush your teeth with unpurified water if you pray immediately afterwards.
23. _____ Adding unclean ice to your beverage is dangerous.
24. _____ People must be taught good water sanitation and hygiene rules.

25. Complete the following chart for bleach/iodine purification.

Bleach/Iodine Purification Chart

Amount of Water	Amount of chlorine bleach to add to:		Amount of tincture iodine 2% to add to:	
	Clear Water	Cloudy Water	Clear Water	Cloudy Water
1 quart		6 drops		
1 gallon	12 drops			(1/2 tsp.) 40 drops
5 gallons			(1 ¼ tsp.) 100 drops	

Score exercises 1 - 25

STOP!

You must now prepare yourself for the FINAL TEST. In preparation, you may want to follow one or more of these suggestions:

1. Review the Objectives.
2. Rewrite every incorrect exercise in the Pre-Test.
3. Reread each section of the Training Pac.
4. Relearn each section you still do not completely understand.
5. Review the Reviews and Pre-Test.