



Additional Activities

Honey Bee Math

Name: _____

Date: _____

Answer the following questions using these honey bee facts.

Weight of average worker bee: 80 milligrams

Amount of nectar the honey sac can hold: 70 milligrams

Amount of pollen a worker can carry in the pollen baskets: 20 milligrams

Maximum number of eggs laid daily by the queen: 3,000

Average number of trips a worker bee makes outside the hive each day: 10 trips

Average speed of a worker bee in flight: 15 miles per hour

Average distance from hive a worker bee travels in one trip: 1-1/2 miles

Average life of a worker bee in the summer: 45 days

1. What is the average total weight a worker bee carries in both nectar and pollen per trip?

Amount of nectar ____ + amount of pollen ____ = ____ Total Weight

2. What is the amount of nectar one worker bee could contribute to the colony in one day?

Amount of nectar carried in one trip ____ x number of trips in one day ____ = ____ Total Nectar

3. What is the ratio of the total weight of a full load of nectar and pollen carried by the worker bee in one trip as compared to her body weight?

4. If you could carry the same amount of weight in comparison to your body weight as a honey bee, how much weight could you carry?

5. Approximately how many weeks does a worker bee live in the summer?

6. About how long would it take a worker bee to fly to a garden 2 miles away?

7. If a worker bee completes 10 trips to a garden 3/4 of a mile away, how many total miles has she flown? How much time has she spent flying in that day?

8. How many miles does the average worker travel in one day?

9. What is the maximum number of eggs a queen bee could lay in one week?

10. How many days would it take a queen to lay 12,000 eggs?

11. What is the maximum number of eggs a queen bee could lay in a year?

12. If a hive has 48,000 bees, approximately how long would it take the queen to lay that many eggs?

13. If a hive has 60,000 bees and 1 percent of those bees are drones, how many drones are in the hive?
14. Since there are 1,000 milligrams in a gram, about 28 grams in an ounce, and 16 ounces in a pound, how many milligrams of pollen would equal one pound?
15. Since a bee can beat her wings 183 times per second, how many times can she beat her wings in one minute?
16. If one worker bee will gather $\frac{1}{12}$ of a teaspoon of honey in her lifetime, how many bees would be necessary to gather 1 pint of honey?
(3 teaspoons = 1 tablespoon, 16 tablespoons = 1 cup, 2 cups = 1 pint)
17. If honey bees visit 2 million flowers to make one pound of honey, how many flowers would the bees need to visit to make a ton of honey?
18. If you wanted to make four hexagons on a flat surface out of toothpicks, what is the least amount of toothpicks needed for your design?
19. During its first day, a larva eats so much that its weight increases five and a half times. If the same thing happened to a student weighing 70 pounds today, how much would he or she weigh tomorrow?
20. If a worker bee can visit ten flowers a minute, and visits 600 flowers before returning to the hive, how long will she be out foraging?