VITAMÍN BEE COLORING & ACTIVITY BOOK

THE BUZZ ON FOOD, BEES, PLANTS, AND MORE!

GAMES.
FUN FACTS.

MAZES
AND MORE!

POLLINATION JUST GOT COOL!

VITAMÍN BEE.TV

Feed a Bee
For nearly 30 years, Bayer has been committed to environmental stewardship and the protection of beneficial insects and bees. Providing society with safe, abundant and affordable food depends both on finding solutions to increase crop yields and protecting pollinators. The Bayer Bee Care Program developed several major initiatives to improve bee health including Feed a Bee which aims to improve nutrition for pollinations through additional forage sources; and Healthy Hives which funds research to improve hive health in the United States.

To learn more, visit beehealth.bayer.us.

This workbook is a collaboration with the Bayer Feed a Bee initiative. To learn more, visit feedabee.com.
**DIRECTIONS:** It looks like Vitamin Bee is going through his old photo album. Color each stage of a worker bee’s life cycle.

- **EGG** 1-3 days
- **LARVA** 4-9 days
- **PUPA** 10-20 days
- **ADULT** 21 day
DIRECTIONS: In any hive, you will find bees at different stages of their life. With up to 60,000 bees in a hive things can get confusing. Count the eggs, larva, pupa, and bees separately to help them keep track.

How many of each are there?

Egg  
Larva  
Pupa  
Adult
I Spy

DIRECTIONS: The queen has gone missing! Can you find her in the chaos of all the busy worker bees? The queen has a longer abdomen than the worker bees. Mark the queen with a colored dot when you find her.

DID YOU KNOW?
Queens are often marked with a paint dot to identify them and to indicate the year they were born.
DIRECTIONS: Read over the facts and answer the multiple choice questions below.

**QUEEN FACTS**
- The queens are developed from larvae selected by worker bees and specially fed royal jelly in order to reproduce.
- The queen will have a much longer abdomen than any of the others, and her wings will appear smaller because of it.
- The queen lays 1000 or more eggs a day.
- There is only 1 queen per hive.
- Queens live 1-3 years on average.

**DRONE FACTS**
- A drone is a male bee that is the product of an unfertilized egg.
- Unlike the female worker bee, drones do not have stingers and do not gather nectar and pollen.
- A drone’s primary role is to mate with a fertile queen. Once they have mated they die shortly afterwards.
- A drone is characterized by eyes that are twice the size of those of worker bees and queens, and a body size greater than that of worker bees, though usually smaller than the queen bee.

**WORKER FACTS**
- Worker bees have many jobs such as: clean, guard, and build the hive, take care of the larva, and make honey.
- Worker bees pollinate flowers while gathering nectar to make honey.
- They can only sting once and will only sting when threatened.
- Workers live about 4-6 weeks in the spring and summer.
- The workers are the smallest bees in the hive.

**DID YOU KNOW?**
There are 3 types of bees in a bee hive the queen, the worker bees and the drone bees.

**MULTIPLE CHOICE**

Which is not a type of honey bee?
A) Drone  B) King  C) Worker  D) Queen

On average, how far will worker bees fly a day?
A) 5-10 miles  B) 2-3 miles  C) 20+ miles  D) 500 feet

What is the right order of the bee life cycle?
A) Egg, pupa, larva, adult  B) Adult, egg, pupa, larva  C) Egg, larva, adult, pupa  D) Egg, larva, pupa, adult
**DIRECTIONS:** Vitamin Bee wants you to show him what you know about the bees. Draw a line from the type of bee to the correct job or trait.

- **DRONE**
  - Guards Hive
  - Builds Hive
  - Has the biggest eyes
  - Pollinates flowers
  - Male Bee
  - Takes care of larva
  - Exclusively Fed Royal Jelly

- **QUEEN**
  - Makes Honey
  - Lays Eggs
  - Mates with Queen
  - Long abdomen
  - Dies after mating
  - Only 1 in the Hive

- **WORKER**
  - No Stinger
  - Cleans Hive
**DIRECTIONS:** A worker bee’s life cycle is only 4-6 weeks long, it’s filled with many jobs that keep the hive going. Draw the object that fits with each job, use the pictures at the bottom as reference.

- **Cleaning** 1-16 Days
- **Fanning** 4-12 Days
- **Wax Making** 12-18 Days
- **Foraging** 12-35 Days
- **Nursing & Serving** 18-21 Days
- **Nectar Transfer** 22-42 Days
- **Guarding**

**OBJECTS**
DIRECTIONS: It’s easy to get lost in a flower field. Follow the bees dotted trail and answer each question along the way to make it safely through.

**DID YOU KNOW?**
Foraging worker bees travel 3-5 miles, visit 1200 flowers, and make 7-13 trips to the hive in a single DAY.

**DID YOU KNOW?**
Bees collect nectar from plants and store it in their honey stomachs.

**How long do worker bees live?**

______________

**True or False, drone bees forage?**

______________

**How many eggs does a queen bee lay a day?**

______________

**True or False, wax making is one of a worker bees many jobs?**

______________

**What is a queen bee’s lifespan?**

______________

**True or False, worker bees have 3 stingers?**

______________
Activity: Collecting Food & Pollen

Directions: Bees forage for nectar to produce honey and feed the hive. Pollen is the protein source for bees and pollination by the bees helps plants reproduce. While collecting nectar they transfer pollen from flower to flower.

Use cotton balls to represent pollen and glue them to the correct areas where they collect on the bees.

Diagram:
- Pollen
- Petal (Attracts Bees)
- Nectar
- Receptacle
- Stamen
- Stigma
- Leaf
Compound Eye
Antenna
Head
Proboscis/Tongue
Thorax
Legs
Wings
Abdomen
Pollen Baskets
**COORDINATION**  **STICKY SITUATION**

**DIRECTIONS:** Vitamin Bee has gotten himself in a sticky situation. Draw a line as quickly as you can through the hive to help him get out. Try not to touch the walls or you'll get stuck!
DIRECTIONS: Without moving your head use your eyes to follow the path and spell out the words you see to answer the question:

What do bees collect?

DID YOU KNOW?
Pollen is the protein source and nectar is the carbohydrate source for bees.
**DIRECTIONS:** Thanks to bees and other pollinators, we are able to enjoy many yummy foods such as fruits, vegetables and nuts. Circle the 15 differences between the pollinated scene vs the unpollinated scene.
DIRECTIONS: Bees aren’t the only pollinators. Many other animals transfer pollen from flower to flower. Circle the 7 animals that also help pollinate.
Anatomy

Parts of the Bee

Directions:
- Label the bee’s anatomy using the word bank as a guide.
- Use the number from the color key as reference to color the bee.

Word Bank

- Head
- Antennas
- Forewing
- Compound Eye
- Thorax
- Hindwing
- Abdomen
- Stinger
- Legs
- Proboscis
1. Yellow
2. Black
3. Brown
4. Grey
Facts

DID YOU KNOW?: Bees use dance to communicate. The waggle dance is for food sources further away. The roundtail dance is for food sources close by.

> 1 Mile Away

Waggle Dance

< 300 Feet Away

Roundtail Dance
DIRECTIONS: This bee is trying to tell her friends what she found by using the waggle dance. Help relay the message by writing down the letters in the order that she travels.

What did the bee find?

---
**Connect the dots**  
**Flower Power**

**DIRECTIONS:** Connect the dots and label the flower parts.
**DIRECTIONS:** Vitamin Bee is trying to figure out how many bees it takes to produce honey. Each spoon equals 1 teaspoon of honey. In the box, write how many bees it takes to make each amount of honey.

<table>
<thead>
<tr>
<th>Teaspoons of Honey</th>
<th>Bees</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>36</td>
</tr>
<tr>
<td>4</td>
<td>48</td>
</tr>
<tr>
<td>5</td>
<td>60</td>
</tr>
</tbody>
</table>

**IT TAKES 12 BEES TO CREATE 1 TEASPOON OF HONEY**

**A SINGLE HIVE CONTAINS 40,000 TO 60,000 BEES**

**TO MAKE 1 LB OF HONEY, BEES MUST COLLECT NECTAR FROM OVER 2 MILLION FLOWERS**

**ON AVERAGE, 1 HIVE CAN PRODUCE 100 LBS OF HONEY A YEAR**

**DID YOU KNOW?**
It takes 64 teaspoons of honey to make 1 lb of honey.
**Unscramble Mixed Fruits/Veggies**

**DIRECTIONS:** Unscramble each word to match the fruit or the vegetable on the right.

<table>
<thead>
<tr>
<th>Word</th>
<th>Unscrambled Word</th>
<th>Fruit/Vegetable</th>
</tr>
</thead>
<tbody>
<tr>
<td>MENLO</td>
<td>Lemon</td>
<td></td>
</tr>
<tr>
<td>TEONMALWER</td>
<td>Watermelon</td>
<td></td>
</tr>
<tr>
<td>RUMUCEBC</td>
<td>Carrot</td>
<td></td>
</tr>
<tr>
<td>TROCAR</td>
<td>Egg</td>
<td></td>
</tr>
<tr>
<td>PAELP</td>
<td>Apple</td>
<td></td>
</tr>
<tr>
<td>MUPKPIN</td>
<td>Pumpkin</td>
<td></td>
</tr>
<tr>
<td>AERP</td>
<td>Pear</td>
<td></td>
</tr>
<tr>
<td>RRREABSYTW</td>
<td>Strawberry</td>
<td></td>
</tr>
</tbody>
</table>

**DID YOU KNOW?**
Bees pollinate many of the fruits, vegetables, and nuts we enjoy. That’s over half the food in our daily diet!
DIRECTIONS: Use the word bank below to find the words in the letter grid.

Word Bank:

- ANTENNA
- BEES
- DRONE
- FLOWER
- FRUIT
- HIVE
- HONEY
- LARVA
- NECTAR
- POLLEN
- POLLINATOR
- PROBOSCIS
- PUPA
- QUEEN
- ROUNDTAIL
- THORAX
- VEGETABLE
- VITAMIN
- WAGGLE
- WORKER
**DID YOU KNOW?:** Almonds are the #1 food crop pollinated by bees in the U.S.

Almonds grow on trees.

They bloom into a flower...

...are pollinated by bees...

...are turned into almonds...

...and are harvested to eat!
**DIRECTIONS:** Vitamin Bee is going nuts over this almond butter maze! Help lead him out of this mess and into a butter situation.
DIRECTIONS:
• You’ll need 1 peat pot, potting soil, or garden bed.
• You’ll need 1 wildflower or vegetable seed of choice.
• Insert the seed in the middle the soil being sure to cover it with the dirt.
• Fill a water pitcher and water the seed once a day.
• Be aware of new plant emergence from the soil and begin recording plant growth with your measuring stick.

To create your own measuring stick you’ll need:
• 1 paint/popsicle stick.
• Markers.
• 1 ruler.
• Place the ruler next to the paint stick and using the markers mark down each inch of your paint stick. Then decorate your new measuring stick to make it unique.
• Now when your plant starts to grow you can use your measuring stick to keep track of how much it grows!
• Make observations and record plant growth with your measuring stick.
• Once your plant is blooming make observations about pollinator visit!
**DIRECTIONS:** Vitamin Bee wrote a secret code just for you. Can you figure it out by using your math skills as a clue? Write the letter in the circle, using the key.

<table>
<thead>
<tr>
<th>Key</th>
<th>1 = a</th>
<th>7 = f</th>
<th>21 = l</th>
<th>16 = r</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 = b</td>
<td>10 = g</td>
<td>40 = n</td>
<td>24 = s</td>
</tr>
<tr>
<td></td>
<td>9 = c</td>
<td>15 = h</td>
<td>4 = o</td>
<td>30 = t</td>
</tr>
<tr>
<td></td>
<td>0 = e</td>
<td>12 = i</td>
<td>48 = p</td>
<td>54 = u</td>
</tr>
</tbody>
</table>

**Problem:**

3 \times 2

0 \times 8

5 \times 0

6 \times 4

8 \times 6

2 \times 2

7 \times 3

21 \times 1

4 \times 3

8 \times 5

1 \times 1

5 \times 6

9 \times 0

3 \times 3

4 \times 4

2 \times 2

12 \times 4

3 \times 8
ACTIVITY

GROW A GARDEN

DIRECTIONS: Vitamin Bee loves flowers that give a lot of pollen and nectar. However, he’s forgotten the steps needed in order to grow a sunflower. Write the order of each step into the correct circle.

Grow it.  Water it.  Plant it.

First, _______________________________________________________
Second, ______________________________________________________
Third, _______________________________________________________

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DIRECTIONS: Help Vitamin Bee find his way back home. Lead him through the crazy garden back to the hive.
There are 3 types of bees in a bee hive: the queen, the worker bees, and the drone bees.

**DID YOU KNOW?**

- **Facts Bee Amazed**
  - **Drawing Jack-Of-All-Trades**
  - **Counting The Hive Thrives**
  - **Cleaning**
  - **Days 4-12 Days 12-18 Days 12-35 Days 18-21 Days 22-42 Days**
  - **MULTIPLE CHOICE**
  - **DIRECTIONS:** Count the eggs, larva, pupa, and bees separately to help them keep track.
  - **Which is not a type of honey bee?**
  - **What is the right order of the bee life cycle?**
  - **OBJECTS**
  - **Use the pictures at the bottom as reference.

- **Drone Facts**
  - **•** A drone is characterized by eyes that are twice the size of those of worker bees.
  - **•** A drone's primary role is to mate with a fertile queen. Once they have mated, they die shortly afterwards.
  - **•** Unlike the female worker bee, drones do not have stingers and do not gather nectar and pollen.

- **In any hive, you will find bees at different stages of their life.**

- **Nursing & Serving**
  - **•** A drone is a male bee that is the product of an unfertilized egg.

- **Foraging worker bees travel 3-5 miles, and they make 7-13 trips a day.**

- **Foraging**
  - **•** The queen lays 1000 or more eggs a day.
  - **•** Queens live 1-3 years on average.

- **How do worker bees live?**
  - **•** Worker bees have 3 stingers.

- **The queen has a longer abdomen than the worker bees.**

- **What is a queen bee’s lifespan?**
  - **•** A queen bee lives 1-3 years on average.
  - **•** The queen will have a much longer life span than any of the others, and her abdomen will appear smaller because of it.

- **The workers are the smallest bees in the hive, take care of the larva, and select larvae to become drones.**

- **Queens live 1-3 years on average.**

- **The workers are the smallest bees in the hive.**

- **The queen has gone missing! Can you find her in the chaos of all the busy worker bees?**

- **Mark the queen with a colored dot when you find her.**

- **What is a queen bee’s lifespan?**
  - **•** A queen bee’s lifespan is 1-3 years.

- **What is a worker bee’s lifespan?**
  - **•** A worker bee’s lifespan is 4-6 weeks.

- **How many of each are there?**
  - **Egg:** 36
  - **Larva:** 24
  - **Pupa:** 29
  - **Adult:** 26

- **How many of each are there?**
  - **Egg:**
  - **Pupa:**
  - **Adult:**

- **Foraging worker bees visit 1200 flowers, and make 7-13 trips a day.**

- **How many of each are there?**
  - **Egg:**
  - **Larva:**
  - **Pupa:**
  - **Adult:**

- **Nectar Transfer**
  - **•** A worker bee’s many jobs include: cleaning, nursing & serving, foraging, guarding, wax making, and fanning.

- **Memory Flower Field**
  - **•** There is only 1 queen per hive.
  - **•** The queen is the only bee that can produce royal jelly in order to reproduce.

- **Did you know?**
  - **•** Nectar is the primary food of worker bees.
  - **•** Bees collect nectar from plants and store it in their honey stomachs.

- **What is a queen bee’s lifespan?**
  - **1-3 Years**

- **What is a worker bee’s lifespan?**
  - **4-6 Weeks**

- **True or False, worker bees have 3 stingers?**
  - **True**

- **True or False, drones have 3 stingers?**
  - **False**

- **True or False, drones mate with queens?**
  - **False**

- **True or False, drones are the product of an unfertilized egg?**
  - **True**

- **How many of each are there?**
  - **Egg:**
  - **Larva:**
  - **Pupa:**
  - **Adult:**

- **What is a queen bee’s lifespan?**
  - **1-3 Years**

- **What is a worker bee’s lifespan?**
  - **4-6 Weeks**

- **How many of each are there?**
  - **Egg:**
  - **Larva:**
  - **Pupa:**
  - **Adult:**

- **How many of each are there?**
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- **Memory Flower Field**
  - **•** There is only 1 queen per hive.
  - **•** The queen is the only bee that can produce royal jelly in order to reproduce.

- **Did you know?**
  - **•** Nectar is the primary food of worker bees.
  - **•** Bees collect nectar from plants and store it in their honey stomachs.
DIRECTIONS: Vitamin Bee has gotten himself in a sticky situation. Draw a line as quickly as you can through the hive to help him get out. Try not to touch the walls or you’ll get stuck!

COORDINATION STICKY SITUATION START Finish

DIRECTIONS: Without moving your head use your eyes to follow the path and spell out the words you see to answer the question: What do bees collect?

Unscramble Follow the Path

What do bees collect?

PAGE 12

DIFFERENCES FRUITS OF LABOR

DIRECTIONS: Thanks to bees and other pollinators, we are able to enjoy many yummy foods such as fruits, vegetables and nuts. Circle the 15 differences between the pollinated scene vs the unpollinated scene.

POLLINATED SCENE

UNPOLLINATED SCENE

PAGE 13

IDENTIFY POLLINATORS

DIRECTIONS: Bees aren’t the only pollinators. Many other animals transfer pollen from flower to flower. Circle the 7 animals that also help pollinate.

Butterfly Humans Humming Birds Dragonflies Wasps Bats Flies Elephants Moths Raccoons Lizards Beetles

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ANATOMY PARTS OF THE BEE

DIRECTIONS: Label the bee’s anatomy using the word bank as a guide.

- Use the number from the color key as reference to color the bee.

Word Bank

- Head - Antennas - Forewing
- Compound Eye - Thorax - Hindwing - Legs
- Abdomen - Stinger - Proboscis

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PAGE 16

PAGE 17
Communication Relay the Message

DIRECTIONS: This bee is trying to tell her friends what she found by using the waggle dance. Help relay the message by writing down the letters in the order that she goes.

What did the bee find?

SUNFLOWER

Page 19

Counting Busy Bees

DIRECTIONS: Vitamin Bee is trying to figure out how many bees it takes to produce honey. Each square equals 1 teaspoon of honey. In the box, write how many bees it takes to make each amount of honey.

IT TAKES 12 BEES TO CREATE 1 TEASPOON OF HONEY.
A SINGLE HIVE CONTAINS 40,000 TO 60,000 BEES.
To make 1 lb of honey, bees must collect nectar from over 2 million flowers.
On average, 1 hive can produce 100 lbs of honey a year.

Page 21

Unscramble Mixed Fruit/Vegetables

DIRECTIONS: Unscramble each word to match the fruit or the vegetable on the right.

Page 22

Word Search Bee Things

DIRECTIONS: Use the word bank below to find the words in the letter grid.

Page 23

Maze Buttery Move Quick!

DIRECTIONS: Vitamin Bee is going nuts over this almond butter maze! Help lead him out of this mess and into a butter situation.

Page 25
**ANSWER KEY**

### Decode

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<th>Code Breaker</th>
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</tbody>
</table>

### Activity: Grow a Garden

**DIRECTIONS:** Vitamin Bee loves flowers that give a lot of pollen and nectar. However, he's forgotten the steps needed in order to grow a sunflower. Write the order of each step into the correct circle.

1. Grow it.
2. Water it.
3. Plant it.

**Steps:**
- **First:** Plant it.
- **Second:** Water it.
- **Third:** Grow it.

### Maze: A Way Back Home

**DIRECTIONS:** Help Vitamin Bee find his way back home. Lead him through the crazy garden back to the hive.

**Steps:**
- **Start**
- **End**

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**PAGE 27**

**PAGE 28**

**PAGE 29**
Dear Parents and Caregivers,

There could be no better spokesman for eating fruits and veggies than Vitamin Bee. A fun, informative and energetic character that gets our audience excited about including nutritious foods into their lives. After all, without the honey bee, we wouldn’t have all this great food!

Vitamin Bee represents a collection of individuals who believe learning about nutritious foods and creating healthy habits are just as essential to young growing minds and bodies as learning the “ABC’s and 123’s”. Our creative family and valued contributors include individuals who have experience with promoting education through television media, a registered dietitian with a Master’s in Public Health, and perhaps more importantly, health conscious parents and their young consumers.

It is a well-known fact that people, especially kids, learn more when they are having fun. So Vitamin Bee delivers huge doses of fun and much more with his curious facts about foods and the life of a bee, kid-friendly recipes and tips, all wrapped up in his love of music, art, and silly antics, that will inspire kids to make healthy choices, one episode at a time. Vitamin Bee also encourages kids, families, and schools to learn and work together in order to build the support needed to create a long-lasting healthy environment.

This workbook is a collaboration with the Bayer Feed a Bee initiative. To learn more, visit feedabee.com.