

BeeCause Grant Program

Observation Honeybee Hive Installing the Hive Base

This must be installed by a professional contractor!



1) Inspect the Hive

Upon receiving the shipment with your hive and hive base, please do a thorough inspection to ensure that there are no broken or missing parts! This is very important before you install the base or the bees! Have your Bee Mentor and Contractor do the same.

Included in Shipment:

- Hive Base (55.5" x 3.5")
- 1.5 inch conduit pipe (1.5" x 24")
- Landing Porch (5.5" x 5')
- Hive Case (41" x 21" x 5")
- Feeder Jar Lid with holes
- The BeeCause promotional materials

2) Site Selection

- Confirm that a school official has approved the location of the hive install and any necessary modifications to the building or classroom before beginning any construction.
- Seek Bee Mentor's advice for the optimum location of the hive.
- Hive entrance should have S or SE sun exposure.
- Building must be insulated.
- Make sure no direct sunlight can reach the hive. Ambient light is ok.
- No AC or Heat units should be near the hive or the hive entrance.

- Allow space for the observation hive to swing 180 degrees with no obstructions.
- Hang the hive so that the middle is at eye level for students.

3) Materials and Tools

- Pencil and Level
- 2" hole saw and drill, to drill through the wall. That will allow the 1-1/2 PVC pipe to go through wall.
- 7/16 socket, open end, or adjustable wrench to remove/replace bolts on viewing panels.
- Phillips screwdriver or #2 Phillips bit for a screw gun, Used to remove PVC pipe and wall mount base from inside hive.
- Other tools not listed above may be needed, depending on how the wall mount is attached. If block, brick or masonry walls are encountered, masonry drills and bits may be needed.
- Fasteners will be needed to attach wall mount base to interior wall, and bee landing porch to exterior wall. The type of fasteners required will depend on wall construction. Construction adhesive on the back of the wall mount, in addition to the fasteners, will provide added support. Adhesive alone is not enough.
- Caulk gun and outdoor silicone caulk for sealing the tube and landing porch.
- Shop Vacuum or drop cloth

4) Step-by-Step Instructions

1) Get necessary fasteners to attach the base to the wall; depends on material (wood studs or concrete); must support 150 pound weight. Also get the fasteners to attach the landing porch to the outside.

2) Pre-drill 4 holes in each of the corners of the Landing Porch to fit screws.

3) Pre-drill holes in the Hive Base...locate depending on stud location for stud wall, or even pattern for concrete wall.

4) From Inside: Mark circle where entrance to hive at the top of hive base will be so that the middle of the hive is at eye level.

5) Drill a 2-inch diameter hole AT A VERY SLIGHT DOWNWARD ANGLE through the wall to the outside. This way any moisture runs out.



6) Measure depth of hole through the wall and cut tube to size PLUS 1.5 inches (3/4 inch for each end to nest into interior and exterior hive parts).

7) From Outside: Insert tube and position 3/4 inch exposed and caulk around the outside of the tube to seal any gaps with the hole.



8) Fit the "Landing Porch" over the tube and attach it to the outside wall with 4 fasteners.

9) Apply a bead of good silicone caulk to the back of the landing porch and around the PVC pipe that protrudes through the wall. After attaching the bee landing porch to the exterior wall, apply silicone caulk around the top and sides of the porch.



10) From Inside: Nest the base opening around the tube and position the base on the wall with a level so that the hive case will hang true to vertical.

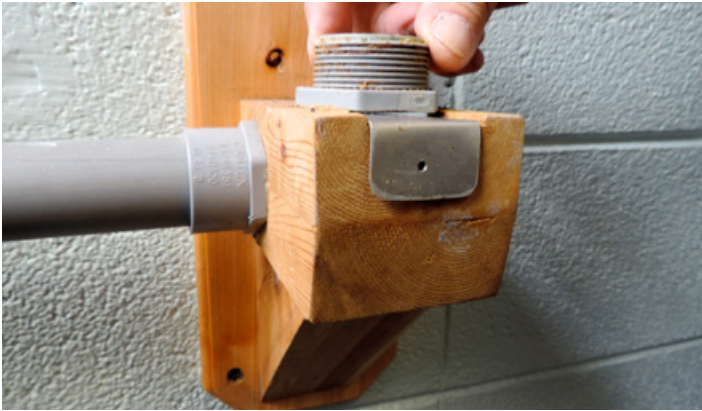
11) Screw the hive base to wall using fasteners (adhesive may be used to help secure base before fastening).



12) Make Sure the base can hold up to 150 pounds!

Special Instructions

- Window installments- This option **REQUIRES** a modified/custom hive base. Please contact BeeCause **PRIOR** to the hive shipping.
 - Once approved by BeeCause and the modified hive base is on hand, cut a piece of 1 x 6 to fit in window (may be thicker to better fit the window grooves). Only needs to be 5 inches high. Cut hole in wood to fit tube; insert tube and seal on all sides; run tube to enter into the side of the base, not the back. Make sure the wood and window are sealed on all sides.



Observation Honeybee Hive

Installing the Bees

During all the steps, including transportation, make sure the hive is completely vertical and well ventilated. Never transport bees when it is above 90 degrees or below 50 degrees.



Before you start, confirm that Hive Base has been securely and properly installed, and be sure that you have all of the parts that go with the hive.

List of parts:

- Hive Case
- 16 Panel bolts- 8 for each side ($\frac{1}{4}$ in x 1.5 in),
- 2 Entrance Covers with screws,

Tools needed:

- Adjustable wrench for side panel bolts ($\frac{7}{16}$ inch)
- Screwdriver for entrance covers.
- Beekeeper's equipment & gear

1) Inspection of the empty hive

- Using a wrench, open one side of the observation hive.
- Confirm that the observation hive is clean. If necessary, use a non-toxic solution and soft cloth.
- Confirm that the ventilation screens are secure.
- Confirm that the feeder screen on top is secure.
- Confirm that both openings at the top of the observation hive and the base (allowing entry and exit for the bees) are sealed so that the observation hive can be transported without escaping bees. Use the plastic or metal covers provided with the hive.

2) Select 8 healthy frames: (deep, not medium in size)

- Depending on the season, some installations will have full frames of bees, brood and honey stores, and others may require empty frames added to the hive so that the bees will be able to expand their colony as needed.
- Be sure the queen is among the frames that are being placed in the hive. A marked queen is

preferable.

3) Place the frames into the observation hive

- Some frames may be thicker than others due to the bees' construction of wax and honey.
- Make sure that you allow enough space between the frame and the glass so that the bees can walk around. This is usually $\frac{3}{8}$ inch.
- To avoid creating a crowded space, place a thicker, more developed frame beside an empty frame, or less drawn out frames.
- The honey frames are usually installed at the top and the brood frames at the bottom.

4) Seal the hive closed

- After all 8 frames are placed within the observation hive, use a wrench to seal the observation hive.
- Be careful not to trap too many bees between the Plexiglas panel and the case as you seal it.
- Check that the seal is tight and flush on all edges.
- Gently brush away any stragglers that may be lingering on the outside of the hive, particularly around the screens and near the entrance.

5) Carry and transport the hive vertically

- Keep the hive in the same upright position when taking it to its new location.
- The hive may be heavy!! You will need 2 people to move the hive.
- Before you take it into a building or vehicle, double check to see if the opening at the top of the hive is still securely closed.

6) Insert the Hive Case into the Hive Base:

- Lift the hive vertically so that is parallel to the wall.
- The hive will fit securely onto the hive base (see Installing the Hive video for a more detailed overview).

7) Release the bees

- After the hive is in place, remove the entrance cover on the hive case and the entrance cover on the hive base; then store the covers back on case and base, respectively. Alternatively, store the covers near the hive so that they are readily available.

8) Finished Product!



Observation Honeybee Hive

Hive Safety



"I hadn't been out to the hives before, so to start off she gave me a lesson in what she called 'bee yard etiquette'. She reminded me that the world was really one bee yard, and the same rules work fine in both places. Don't be afraid, as no life-loving bee wants to sting you. Still, don't be an idiot; wear long sleeves and pants. Don't swat. Don't even think about swatting. If you feel angry, whistle. Anger agitates while whistling melts a bee's temper. Act like you know what you're doing, even if you don't. Above all, send the bees love. Every little thing wants to be loved."

- Sue Monk Kidd, *The Secret Life of Bees*

Outdoor Signage

All Hives come with a sign to be posted near the beehive entrance on the exterior of the building. This helps alert visitors to the fact that there are bees in the area. Also, it helps to remind people about not using harmful chemicals, especially near the Observation Hive.

Indoor Signage

Post the Safety Rules document near the hive for easy reference by all who visit the hive. Proudly display your BeeCause plaque highlighting the number of your school on our mission to 1000 schools.

Bee Entrance

For the Observation Hive, the bees enter and exit on the outside of the building. If you are outside, please stay clear of the entrance. Bees need about 4 to 5 feet of clearance before they fly up towards the sky! It is a good idea to give them a safe, 10-foot perimeter so that their flight is uninterrupted.

Also, bees only live six weeks in the Spring and Summer; so, there are 100s of bees dying on the way back to the hive or inside the hive. There will be times when a number of bees will be within steps of the landing porch. They will not be in a state to sting; however, if the bees are handled,

then the chance a sting will occur is great.

Swing Arm

This feature is integral in the purpose of the Observation Hive. When moving the hive, be sure to do so with care. Slowly rotating the hive for better observation is welcomed. Avoid swinging the hive quickly or with a jerky motion, and never hang on the hive.

Bees inside the Classroom or Office

The hive case is a sturdy and secure container. Bees cannot fly out, climb out, or chew out. In the rare incident where a bee may have found its way into the building without using the bee entrance, you may gently place a cup over the bee and slide a piece of paper between the cup and surface on which the bee landed. The bee may then be transferred outside.

Bee Etiquette

The honeybees are very busy, and for the most part, will not notice you near the Observation Hive. Please keep it that way. Strong vibrations or very loud noises may agitate the bees, and in order to protect the hive, they may sting someone outside. Help the bees feel at home by providing an environment void of extremes in temperature and noise.

A Bee Sting

If you do get a bee sting, make sure the stinger is removed as quickly as possible as the venom from the stinger will continue to pump into the skin. A fingernail or credit card can be used to effectively remove the stinger. Bentonite Clay or Baking Soda will help soothe and reduce swelling. A cold compress will also relieve some of the pain. Do not

rub or scratch the site, as this will produce more histamine, which causes itchiness and swelling. Evidence of the sting will disappear in a few days.

**IF YOU ARE ALLERGIC TO BEES,
USE YOUR RECOMMENDED TREATMENT
IMMEDIATELY!**

Observation Honeybee Hive Bee Advocate- Hive Checklists



Daily Hive Check

- Make sure that the hive is covered when not being used for education/observation purposes. Bees like dark.
- Make sure that the hive is intact and ventilation holes are unblocked.
- Quick peek at the bees for population and activity (see detail below).
- Write down any observations or questions for the beekeeper.

Weekly Hive Check

Pick a day and be consistent! Write down ALL of your observations of the hive in your school's bee journal (we suggest getting a standard composition book that will be kept near the hive at all times so that it is easily accessible to the advocate and the bee keeper). Please record all observations even if they are not listed below! Has anything changed from the previous week? Review the journal entries of the previous week so you can compare and contrast later.

- Check population...a healthy hive has more than 4 frames full of bees!
- Find the Queen...she may have a colored dot on her back.
- Look for eggs...if you don't see the queen, this is a great way to know that the queen is healthy and laying.
- Look for brood...is there drone brood (light

brown raised cells), worker brood (light brown cells sealed flat), or queen cells (peanut shaped cells)? Take note of any queen cells you see; it could mean the bees are replacing a queen or the bees are preparing to swarm.

- Check for pests: small beetles, mites (on the back of the bees), and wax moths...let your beekeeper know!
- Check hive cover: make sure it fits well and is being used as suggested.
- Cleanliness: a healthy colony does not have a lot of debris on the bottom.
- Take note of any strange or foul odor in the hive. This may mean there is a problem with the brood. Contact your beekeeper.
- Check for Moisture: condensation should not be seen for more than a few hours. If this persists, Contact the beekeeper.
- Check honey stores: at least 2 frames should be full of honey. When to feed... If there isn't any honey or if there has been long periods of inclement weather/winter, consider feeding the hive with sugar water. See "How to feed the bees" below...
- Look for pollen...different colors of pollen refer to different flowers.

Any questions or observations concerning the health of the colony should be relayed immediately to the beekeeper.

Observation Honeybee Hive

Notes on Feeding the Bees



When do you need to feed the bees?

- The best-case scenario is you never have to feed them; it's best to let them gather their own stores.
- If the season has a low nectar flow, and your bees run out of honey stores, then you must feed.
- The best time to feed is just as soon as you or the Bee Mentor determines that the honey stores are low and the bees will need food for winter. This is usually in September or October.
- Even if you don't feed them until December, it's better to feed them then than to let your bees starve!

What do I feed the bees?

- A Bee Tea (See Spikenard Farm's Bee Tea recipe) or a simple syrup mixture (recipe below) are two good options.

Measuring ratios for syrup:

- The standard mixtures are 1:1 in the spring and 2:1 in the fall (sugar:water, by weight).
- The ratio 5:3 (sugar:water, by weight) may be

used at any time...it keeps better than 1:1 and is easier to dissolve than 2:1.

How do I make syrup?

- Boil the water, reduce heat, and add the sugar.
- When it's all dissolved, turn off the heat.
- With 2:1 ratio it may take longer for it to dissolve.
- Boiling the water makes the syrup keep longer by killing all the microorganisms that might be in the sugar or the water.

How do I place the feeder?

- Fill a quart mason jar with the prepared mixture and top with the feeder lid (with small holes in it), provided in your package.
- Secure the lid with a mason jar band and turn the jar upside down,
- The liquid should remain in the jar even though the lid has holes.
- Nest the jar in the feeder receptacle at the top of the hive.