



AntWorks™

Instructions and Interesting Facts



A Space Age Habitat For Ants!



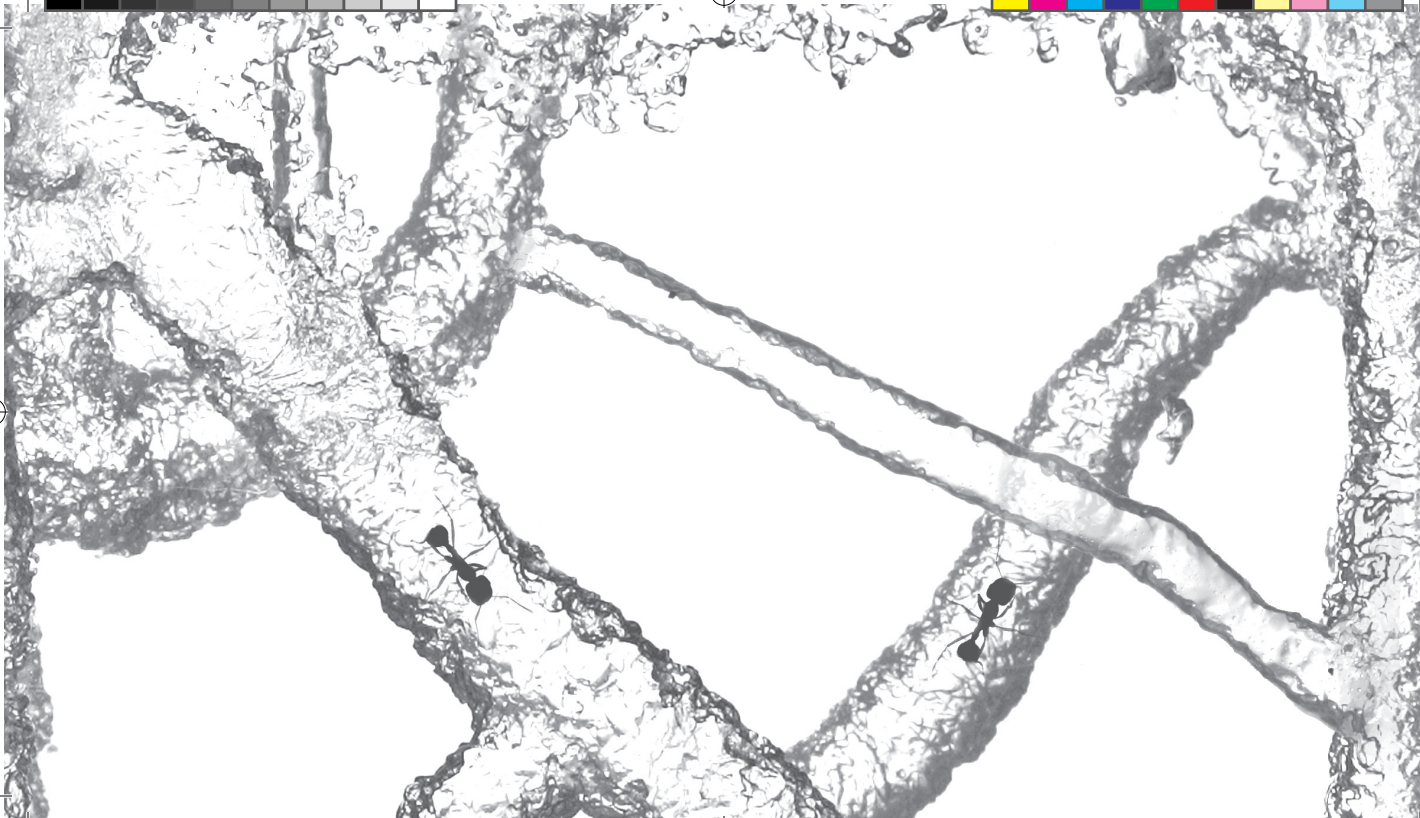
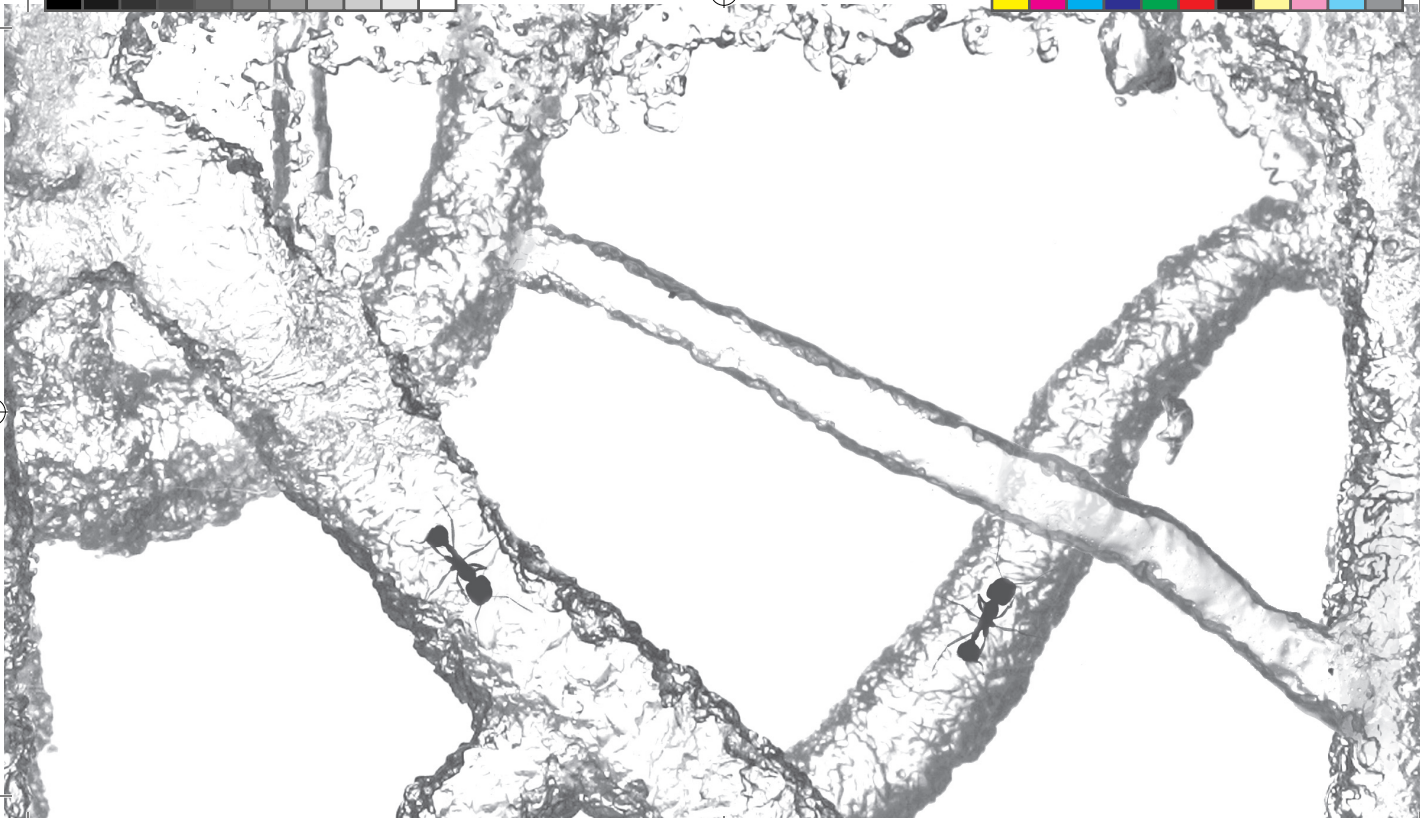




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Introduction



Ant Astronauts? Do you have what it takes to become an astronaut? NASA has some pretty strict requirements for its extra-terrestrial voyagers. A Space Shuttle pilot must have a science degree and over 1,000 hours of jet flying experience. Mission specialists must possess a respectable amount of scientific knowledge in their field. For other types of astronauts, NASA has a much stricter set of requirements – such as having two stomachs and six legs!



On a mission to study insect life in near-weightlessness, the Space Shuttle carried into orbit a special ant habitat very similar to Fascinations® ANTWORKS™. NASA wanted to see how ants would tunnel in micro-gravity, however traditional soil-based ant habitats posed a problem. The tremendous G-forces and shaking during liftoff and re-entry would collapse the tunnels (not to mention how difficult it would be to try giving ants food and water on a regular basis in a near weightless environment!).

Rather than using soil, an ant habitat was created utilizing a special gel that would not collapse during lift-off (which would crush the ants) and serve as a food and water source for these ant astronauts. Your new ANTWORKS™ is based on technology used by NASA in the shuttle experiment.

The ANTWORKS™ allows you to study the behavior of ants in a unique, self-contained environment. This translucent gel not only serves as a tunneling medium for the ants, but is their food and water source as well. Our ANTWORKS™ gel is loaded with nutrients and supplements to promote healthy growth in the new colony. You will become fascinated as the ant architecture develops and may come to agree that these insects are a lot more intelligent than most people realize!





Directions For Use



1. Open your ANTWORKS™ container. Using the enclosed stick, poke four holes in the gel. Make two of the holes about 1 inch deep and make the other two ½ inch deep. These will help get the ants started tunneling.
2. Insert about 20-25 ants into your ANTWORKS™ container and close the lid (ants not included with product). You can either collect your own ants, or use the enclosed order form. If you collect your own ants – DO NOT mix different species of ants in the same container (they don't play well with others). We recommend ordering Harvester Ants from Life Studies (see enclosed order form). Harvester Ants are the optimum size for viewing and have large mandibles for tunnel construction. Your ANTWORKS™ includes a magnifying glass for detailed inspection of the ants and tunnels.
3. NEVER handle ants with your bare hands or allow them to come in contact with skin! Some ants sting, others bite, and some will spray formic acid.



4. DO NOT store the ANTWORKS™ in direct sunlight. Ants prefer shade. Room temperature (58-74 degrees Fahrenheit) is the preferred temperature for your ANTWORKS™. Avoid extremes of heat or cold.

5. Be patient at first. The ants may take up to 24-48 hours to start tunneling. The gel is an alien environment to the ants and it can take some getting used to.

6. Although the ants require little oxygen, opening the lid for a few seconds every week or so gives these hard workers a breath of fresh air. Actually, ants have no lungs, but take in oxygen through little holes in their bodies.

7. R.I.P. – Adult ants (workers) normally live an average of 1-3 months (3 months is considered high). Some ants will outlive this span, while others will expire before one month. As all of the ants you will use (whether ordered or collected on your own) are adults, circumstances in their development will cause some to be hardier than others. Although your ANTWORKS™ gel contains special ingredients to help prevent infections throughout the colony from bacterial and fungal growth, it is a good idea to remove dead ants as soon as possible with a small stick or cotton swab. Should an ant die within one of the tunnels, other ants will usually transport the body to the surface. This is how ants help prevent disease within the colony – see how smart they are!



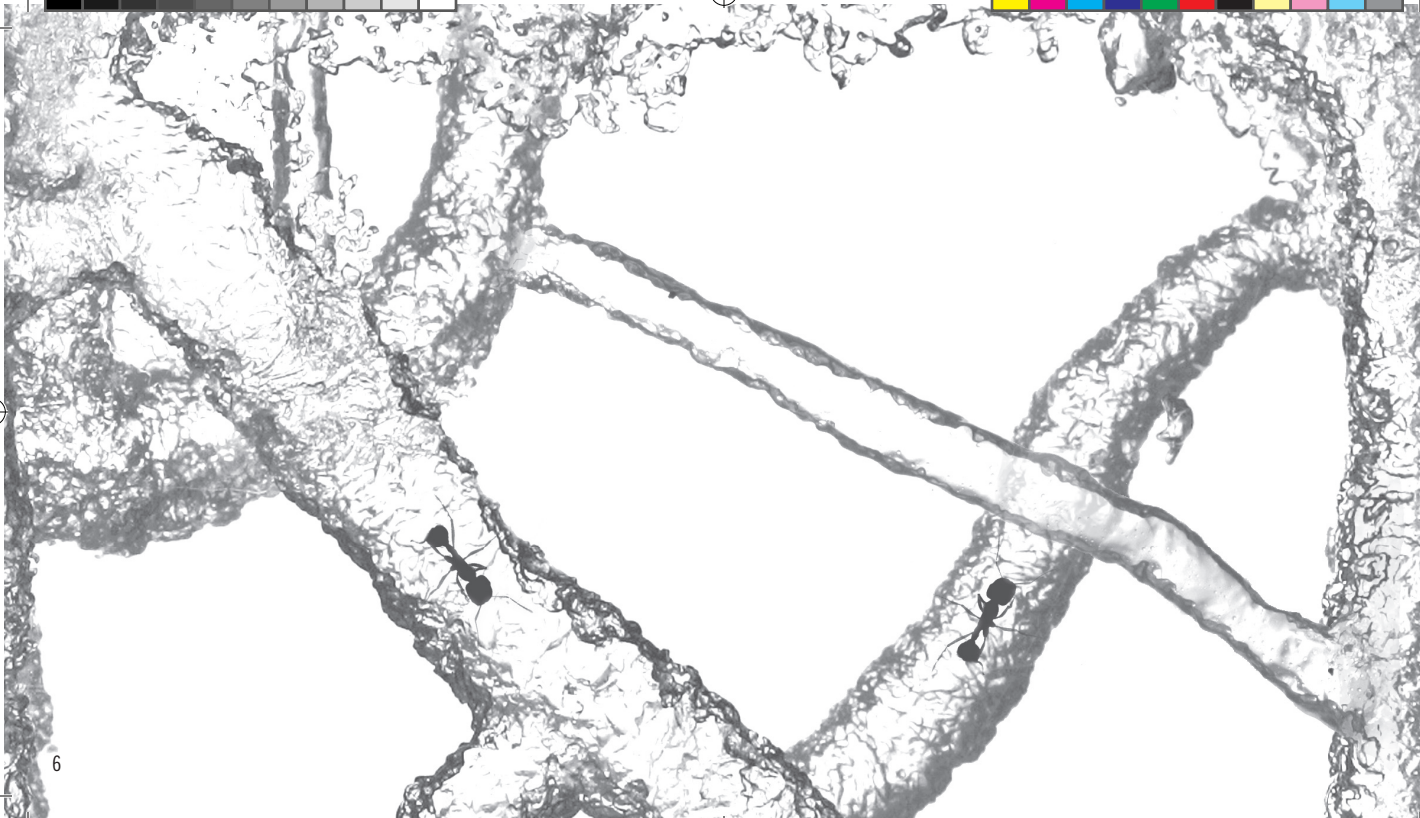


Remember – ants like it best when your AntWorks™ is in the shade.

8. Ant Architecture is not just limited to the tunnels. Your ants will also use ‘building blocks’ created from the gel to line the ANTWORKS™ walls and form hills on the surface. Some species even use the gel to encase dead ants on the surface. To ensure maximum visibility, it is important to remove the dead ants as they appear (it’s also good manners!).

9. When your ant colony expires, use a cloth or paper towel to clean the ANTWORKS™ walls (and any dead ants or residue). Add some fresh ants and see how they react to and modify the existing tunnels.







Interesting Ant Facts



Think you're smart? Harvester ant colonies can have as many as 40-50 thousand ants. Such a colony would collectively have about the same number of brain cells as a human being!

Speaking of communication – ants ‘talk’ to each other using scent, sound, touch and sight. You can witness ants in your ANTWORKS™ ‘talk’ to each other by touching antennae. Ants will also gather together in groups (planning committee perhaps?). You will notice evidence of ant teamwork being used in such things as connecting two tunnels. That has to be planned somewhere, right?

Bodily waste – Ants in your ANTWORKS™ dispose of waste matter, just like any other ant. Evidence will be in the form of small, brown spots/streaks (usually in the corners).





Is that Sam or Samantha? Should you decide to name your ants, take into account that they are all female. This includes all the ant workers, soldiers, etc. that you find outdoors. Male ants are created only as needed by the colony for reproductive purposes and they die shortly after mating.

ANTWORKS™ activity is going on 24/7. While some ants are sleeping, others are hard at work. Check to see that an ant is actually dead, before removing her from the ANTWORKS™.

Is there a myrmecologist in the house? Myrmecology is the study of ants (either scientifically or as a hobby). By studying the behavior of ants in your ANTWORKS™, you become a myrmecologist (lab coat not included).

Ant lions, spiders and birds – oh my! Ants have many predators, in addition to the infamous anteater. Ant lions dig traps using loose dirt, waiting for the ants to fall in. Spiders, wasps and birds find ants tasty as well. The ants in your ANTWORKS™ are not only safe from these predators, but don't have to forage for food, as there's plenty of nutritious gel around!

How much can you bench? If you decide to name your ants, you might choose Armstrong as a surname. Ant workers can carry up to 50 times their own weight. If humans could do this, the proverbial "98 lb. weakling" could still lift nearly two and a half tons!





Impressive record – Ants are one of Earth's oldest existing residents. Ant fossils have been found that date back over 100 million years. When the Tyrannosaurus Rex last walked the earth, ants already had a 35+ million year old claim on the planet!

If it ain't broke... The ants you see today are not that much different than those found over 100 million years ago. Ants adapted to their environment so well over the eons, that there was little need to evolve further. Other examples of creatures nature saw fit to leave alone over time are the crocodile and the shark.

Family resemblance? Take a close look at the ants in your ANTWORKS™ container. Now imagine them yellow and black with wings. Scientists (they love to classify things) put ants in the same group as wasps. Still, a wasp flying into your house will get much more attention than the humble ant!

It goes right to my hips. Ants across the world eat a variety of foods. Harvester Ants collect and eat seeds, Leaf-Cutter Ants eat fungus and Army Ants eat pretty much whatever gets in their way. Most ants crave sugars and can detect the smell of sweet foods from very far away. Ants add protein to their diet by eating dead insects (caterpillars are a favorite). Ants will use their extra stomach (called the 'crop') to store food for other members of the colony. Given that your ants are surrounded by the ANTWORKS™ nutritious gel, there is plenty to eat for all.





Hypnoformawhat? Don't just call them bugs. Technically, ants are insects (the whole 'six-legs' thing). Even more technically, ants are Hymenoptera Formicidae. The Hymenoptera is the wasp part, while the Formicidae is the ant part. It's all Greek to me.

Don't get them mad! Ants represent only .001 of Earth's insects, yet there are over 10,000,000,000,000,000 of them alive right now. There are only 6,000,000,000 humans. For those of you who don't like zeros, the ants out number us 1,666,666 to one.

Making scents of it all... Ants have a very keen sense of smell (through their antennae) and the ability to secrete pheromones. These pheromones can be used to identify a colony (each has its own scent) and to create a navigation trail when foraging for food (much like Hansel and Gretel with the breadcrumbs).

Who pays for dinner? In a nutshell, ant reproduction goes like this: The male and princess ants (both have wings) fly away from the nest, mating during flight. The princess ant loses her wings, becoming a queen (starting her own nest), while the male dies soon after the mating flight. The queen creates male ants about once per year and they exist solely for mating.





Various Types Of Ants



Harvester Ants are available using the enclosed order form. These ants are great for study, as they are of a good size and have large mandibles for creating tunnels in the gel. In addition to Harvester ants, there are many other fascinating types of ants:

Slave Maker - These ants actually raid the nests of other ant colonies in order to steal cocoons. When the cocoons hatch, the new ants work as slaves in their new colony.

Dairy Ants - As aphids suck out sweet juices from a plant, these ants will come along and 'milk' the aphids. After filling both stomachs with nutritional liquid, ants will return to the colony and feed the others. Some species use select workers as 'food banks'. These special ants live only to collect liquid food from other ants, storing it in their ever-expanding crops for when it is needed by hungry workers in the colony.





Leaf Cutters - These gardeners tear off chunks of leaves, carrying them back to the nest. While these ants do not eat the leaves (they can't digest the cellulose), fungus grows from the leaves, providing a food source.

Fire Ants - These ants cause a very painful sting and groups of them have been known to kill small animals. Do not attempt to collect fire ants for your ANTWORKS™!

Army Ants – These ants can live in colonies with populations over several hundred thousand. When on the march, these ants will swarm, attacking everything in their path. Animals not able to fly, swim or quickly move out of the area – are breakfast.

Note: DO NOT attempt to collect Army Ants for your ANTWORKS™ container. Should you see several hundred thousand very focused ants moving in your direction, we advise quickly leaving the area.





Suggested Reading

Leiningen Versus The Ants is an excellent short story by Carl Stephenson. Centered around a Brazilian farmer's battle to protect his land from invading Army Ants, the author provides a great illustration of this insect's tenacity. Given the advantage of technology and being forewarned about the approaching colony, Leiningen and his workers employ such weapons as fire and water against the relentless swarm. Who will win in the end? Be sure to check out this great tale at your local library or on the World Wide Web.





Ant Order Form

Catching your own ants is fun! If you have problems corralling your own colony however, just order a fresh supply from **Life Studies**.

Harvester Ant Supply: \$3.00 US Residents (Utah residents add 16 cents sales tax)
\$5.00 Canadian Residents

Each order contains a supply of approximately 25 Harvester Ants
(A few may die during transition).



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Harvester Ant Order Form

Fill in the requested information and send it with payment to:

Life Studies – 490 S. 400 W. – Hurricane, UT 84737 – Fax#: (435) 635-9005

To ensure prompt shipping, please fill in the following information:		
Name:	Phone:	
Address:		
City:	State:	Zip:

To order with your Visa or MasterCard, please fill in the following information:	
Card Holders Full Name:	
16 digit Card Number:	
Expiration date:	


Note: Credit Card orders are accepted with Visa or MasterCard only.

Check Item Box:			
<input type="checkbox"/>	AA	Harvester Ant Supply (US Shipping)	\$3.00
<input type="checkbox"/>	AAC	Harvester Ant Supply (Canadian Shipping)	\$5.00





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