

**The Pop Ups.** Stay seated. Three, two, one, ignition. Get ready for an adventure of magnificent proportion.

**The Pop Ups.** (Singing.) I don't know what you've been told, but we're in a golden age - so many discoveries that are jumping off the page. Wow in the world. Wow in the world. Wow in the world. Wow in the world. Wow in the world. Wow in the world. Wow in the world. Wow in the world.

**The Pop Ups.** With Guy and Mindy. We're on our way, Houston.

**Tour Guide.** Hello.

(Soundbite of microphone feedback.)

**Tour Guide.** Oh, sorry. Oops - that's better. Good morning, everyone. And welcome to our animal architecture neighborhood tour. Today, I shall lead you through a curated, diverse animal neighborhood. This tour will focus on the animal art of home-building. Animal homes take many forms - nests, burrows, dens, webs, hives, holes, caves and hollows.

**Guy Raz.** Ugh. Come on, Mindy. Where are you?

(Soundbite of phone ringing.)

**Mindy Thomas.** Whee! (Laughter.)

**Guy.** What in the...

**Dennis.** Mindy, take your hands off my eyes. I can't see anything.

**Mindy.** Oh! Sorry.

**Guy.** Dennis?

**Mindy.** Ah, Dennis! Watch out!

(Soundbite of crash.)

**Dennis.** Oh. Did it work? Are we stopped? Oh, ow.

**Mindy.** Whew. Man. Did we miss it?

**Guy.** Mindy, what in the wow was that?

**Mindy.** Ah. What do you mean?

**Tour Guide.** OK, is that everyone? No more last-minute arrivals?

**Dennis.** We're all here now.

**Mindy.** Sorry.

**Tour Guide.** Excellent. Let's begin the tour. Whether it's a nest, burrow or a den, there's no place like home. Our first stop is a beautiful structure built by the Australian bowerbird. Now, some say...

**Guy.** Well, I sure am glad you made it, Mindy. I've been looking forward to this tour for weeks.

**Mindy.** Me too. I'm hoping I can get a couple of ideas for my newest expansion of my gingerbread mansion.

**Guy.** Expansion?

**Mindy.** Yeah. I'm building an Olympic-sized ball pit in the bathroom arcade.

**Guy.** Uh-huh. Oh, I think we're at our first stop.

**Tour Guide.** There are many reasons for an animal to roll up their sleeves and build their own domicile - warmth, shelter and boosting the local economy by hiring neighborhood contractors.

**Guy.** Huh?

**Tour Guide.** But, perhaps, one of the strongest reasons of all is love.

**Mindy.** Love?

**Tour Guide.** That's right - love. It happens all over the animal kingdom. But nobody builds a room to impress quite like our feathered friend, the bowerbird.

(Soundbite of bird cooing.)

**Guy.** Wow. Take a look at this nest, Mindy. It looks like a modern art sculpture.

**Mindy.** Yeah. What's it made of?

**Guy.** Well, it looks like it's made out of twigs.

Mindy. Yeah, but they're all twisted together in this fancy-looking shape.

**Tour Guide.** Like many birds in the animal kingdom, the bowerbird builds these extravagant nests to attract a mate.

(Soundbite of bird cooing.)

**Mindy.** Oh, I get it, Guy Raz. These bowerbirds build these structures to show off to their potential mates to prove that they're ready to settle down, make a home and raise all of their future bowerbird babies.

**Guy.** Exactly.

**Mindy.** Look at this one. Wow - this guy really went all out.

**Tour Guide.** As you can see, the architect of this nest has decided to adorn it in the traditional bowerbird fashion, by placing objects of great color around the house.

(Soundbite of bird cooing.)

**Guy.** Look at all of these things the bowerbird has collected, Mindy.

**Mindy.** It's so colorful.

**Tour Guide.** The bowerbird collects colorful objects from its surroundings in hope those bright colors will attract a mate.

(Soundbite of bird cooing.)

**Mindy.** Wow. It's bright, Guy Raz. Look at all of these colorful objects. Here's a lemon and a - ooh, a colorful ribbon. And hey, Guy Raz, aren't those your highlighter markers?

**Guy.** Hey, my limited edition 2012 signature highlighters - I've been looking for those for weeks.

**Mindy.** Looks like this little birdie thought that they would make a great addition to his front yard.

**Guy.** Yeah, looks like it. I think I'm just going to...

(Soundbite of bird screenching.)

**Guy.** OK, OK, fine. You keep them.

**Dennis.** Ahem. Excuse me, Mr. Tour Guide Sir?

**Tour Guide.** Yes?

**Dennis.** When will these bowler birds begin bowling?

**Tour Guide.** No, they're not bowler birds; they're bowerbirds. They build bowers, like a room or a cottage or a boudoir.

**Dennis.** Oh.

**Tour Guide.** Now, we'll be leaving the avian world behind and looking at an abode that is causing quite a buzz.

**Mindy.** OK, so some animals build a home to attract a mate. But what about after that? I mean, surely the main reason to build a home is so that these animals can have somewhere nice and cozy for them and their family to live, right?

**Guy.** Well, yeah. In fact, one of the main reasons animals build nests or burrows or hives is to raise their young, somewhere that's warm and cozy and protected from predators and easy to store food.

**Mindy.** Right. And nothing is a better example of that than...

**Tour Guide.** The beehive.

(Soundbite of buzzing.)

**Tour Guide.** One of nature's architectural marvels.

**Crowd.** Ooh, ahh.

**Tour Guide.** Although many commercial hives are built by humans, the homes you see in front of you were constructed entirely by bees for bees.

**Mindy.** Whoa. Look at the size of this thing, Guy Raz.

**Guy.** It must be more than forty inches tall.

**Mindy.** Yeah, that's like a meter - over three feet.

**Guy.** Yeah. But I think this beehive might be on the bigger side of things. Beehives in the wild usually grow to about twenty inches or half a meter tall.

**Mindy.** Wow. Must be a pretty big family to feed and keep warm in there.

**Guy.** You can say that again. With a hive this size, Mindy, there could be up to sixty thousand bees living in here.

**Mindy.** Sixty thousand bees? That's like a sold-out Dodger Stadium all crammed into one house.

**Guy.** And that's not even the craziest part, Mindy. Imagine that all of those people crammed into that stadium were all related.

**Mindy.** What?

**Guy.** Well, that's how hives work. It's a family business.

**Mindy.** Uh, hold the phone, Guy Raz. You're telling me that all the bees in this hive have the same mom.

**Guy.** Yeah. And not only that, but all of the bees that live in this hive are females, which means they are all sisters because they share the same mom who's known as the queen bee.

**Dennis.** Queen bee? Oh, I love her. (Singing.) If you like it, then you bring don't jing on it. And your mom ain't bring a thing on it. Hey, hey...

**Mindy.** Dennis, we're not talking about Beyonce; we're talking about actual honeybees - you know, like the ones we're looking at right now.

**Dennis.** Sorry, Mindy. I can't hear you from all the way over here in 2008.  
(Singing.) Hee-hee-hey, hey-mo-hee...

**Guy.** Anyway, Mindy, as I was saying, these queen bees can lay up to fifteen hundred eggs every single day. And those little worker bees will go on to make that honey that will feed the colony for the rest of the winter.

**Mindy.** Ah, so this hive provides a safe place for all the bees who live in it, it's also a place to store food, and it's somewhere isolated from the outside world?

**Guy.** Yeah, isn't that amazing?

**Mindy.** Everything you could possibly want in a dream home - minus the ball pit.

**Guy.** Better bee-lieve it.

**Crowd.** Ow, oh, ow.

**Tour Guide.** It looks as though these bees are getting a little agitated by our presence. Let's move from their territory and toward the final home of the tour.

(Crosstalk.)

**Mindy.** Oh, Guy Raz, this last stop on the tour is the one I've been waiting all week to see. It's the whole reason I came along in the first place.

**Guy.** What do you mean?

**Mindy.** Well, as I was flipping through the latest issue of Good Habitat Keeping...

**Guy.** Good Habitat Keeping?

**Mindy.** Yeah, it's like that Good Housekeeping magazine but for animals. Reggie got a subscription after they did this special on nests of the North. Anyhoo, I flip through it sometimes when I'm waiting in the dentist's office.

**Guy.** Right.

**Mindy.** And last month's issue featured this place. And all I can say is, it's pretty special.

**Guy.** Well, what do you mean?

**Tour Guide.** Here we are - the final stop of our tour. But rest assured, we've saved the best until last. Say hello to the home of the spittlebug.

**Crowd.** Whoa.

**Dennis.** What? What are we looking at? That foamy white stuff? It just looks like soap or - oh, gross. There's a bug in it.

**Tour Guide.** Although it may look like someone's saliva is plastered all over this plant, what you're looking at is, in fact, a home.

**Guy.** The spittlebug - I don't think I've heard of that insect before, Mindy.

**Mindy.** Well, you might know it better by its adult name - the froghopper.

**Guy.** Isn't that the name of that turbo-charged pogo stick you designed last year?

**Mindy.** That invention was actually inspired by this very insect.

**Guy.** That insect inside that pile of spit right now?

**Mindy.** Well, not exactly. It hasn't become a froghopper yet.

**Guy.** Huh. What do you mean?

**Mindy.** Well, in the same way that a caterpillar turns into a butterfly, the spittlebug...

**Guy.** Turns into a froghopper.

**Mindy.** You got it.

**Guy.** And I'm guessing it's called a spittle bug because its home kind of looks like...

**Mindy.** A giant pile of spit? Yes.

**Guy.** Uh-huh.

**Mindy.** But if you ask me, a better name for it would've been the pittlebug.

**Guy.** The pittlebug?

**Mindy.** Uh-huh.

**Guy.** What do you mean, Mindy?

**Mindy.** Well, do you want to know how this insect makes its protective, little bubble house?

**Guy.** Yes?

**Mindy.** It pees it out.

**Guy.** What?

**Mindy.** What's really bonkerballs is that it's all because of the spittlebug's favorite food.

**Guy.** Which is?

**Mindy.** Plant sap.

**Guy.** Plant sap? You mean the watery stuff that runs through the plant's stem?

**Mindy.** You know it. The spittlebug attaches itself to the plant, sticks its little beak into the stem and...

(Soundbite of sucking through straw.)

**Mindy.** ...Sucks out all the sap.

**Guy.** Huh, kind of like a juice box.



**Mindy.** Yeah. Only the problem is this plant sap is not very nutritious. Which means that the spittlebug bug has to drink a lot of this plant sap. And a lot of plant sap means...

**Guy.** A lot of pee.

(Soundbite of water flowing.)

**Mindy.** Exactoritos. And when I say a lot, I mean a lot. On an average day, the spittlebug can pee up to two hundred and eighty times its own body weight in urine.

**Guy.** What?

**Mindy.** I told you it was a lot of pee.

**Guy.** Mindy, there's a lot, and then there's two hundred and eighty times your own body weight. That would be like you or me peeing out twenty-seven hundred gallons thousand seven hundred gallons or ten thousand liters of urine every single day.

**Mindy.** Yep, like fourteen hot tubs full of pee. And when the spittlebug pees, it doesn't pee out a nice steady stream. It pees out bubbles.

**Guy.** What reason could you possibly have for wrapping yourself up in thousands of tiny pee bubbles?

**Mindy.** Well, before we get to that, I should mention that it doesn't taste very nice.

**Guy.** Doesn't taste very nice?

**Mindy.** Yeah, apparently, it's pretty bitter-tasting.

**Guy.** And what does pee bubbles being bitter have to do with anything?

**Mindy.** Well, as it turns out, the spittlebug is a favorite food for a lot of different animals, like wasps and spiders and small birds.

**Guy.** I think I'm starting to understand it. If it's surrounded by these bitter pee bubbles, then predators are less likely to chow down on the spittlebug.

**Mindy.** Exactoritos. And by protecting it from predators, those bitter pee bubbles give the spittlebug time to go through its transformation into a frog hopper.

**Guy.** Huh. So the spittlebug uses this bubble house as a sort of cocoon, I guess, sort of like in the way that a caterpillar wraps itself up to transform into a butterfly.

**Mindy.** Yes. But unlike a caterpillar's cocoon, the spittlebug's housing is airtight, meaning that it's had to find a pretty ingenious way to breathe.

**Guy.** And what's that, Mindy?

**Mindy.** Oh, through its butt.

**Guy.** Its butt?

**Mindy.** Uh-huh.

**Guy.** Mindy, are you making this up?

**Mindy.** Not this time, Guy Raz. The spittlebug uses its butt as a snorkel.

**Guy.** As a snorkel? Mindy, what are you talking about?

**Mindy.** Well, the spittlebug, like many insects in the animal kingdom, breathes out of its butt. So when it's in its bubble home, it simply sticks its butt outside and takes a deep breath. And then, when it gets threatened, say by a natural predator, it simply brings its butt back inside, waits for the threat to pass, and then sticks its butt back outside and keeps breathing.

**Guy.** That's incredible, Mindy. Even if it's a little gross.

**Mindy.** I wish I could breathe out of my butt.

**Guy.** What?

**Tour Guide.** Ladies and gentlemen, that does conclude our tour of the animal architecture neighborhood. If you're interested in more of our neighborhood tours, next week, we'll be making mountains out of mole hills with our burrow and bunks tour.

**Dennis.** Thanks, fake David Attenborough.

**Tour Guide.** Indeed.

**Guy.** Wow. What a tour, Mindy.

**Mindy.** Who knew we had all of these incredible animal neighbors just down the street from us?

**Guy.** I know. What an eclectic group of animals.

**Mindy.** (Gasping.) Guy Raz.

**Guy.** What?

**Mindy.** These little spittlebugs give me a new idea from my bathroom ball pit arcade.

**Guy.** Uh, what's that, Mindy?

**Mindy.** Pee. Bubble. Wrapped. Walls.

**Guy.** Huh?

**Mindy.** Yeah, just think about it. It's perfect. It'll keep us protected if we fall down the stairs. And it'll help keep Dennis from eating the walls off my gingerbread mansion.

**Guy.** Sure. Uh—

**Mindy.** Speaking of which, where is Dennis?

**Guy.** It looks like the tour guide is narrating his behavior over there.

**Tour Guide.** Here we have the common North American busybody.

**Dennis.** Sir, sir! Your shoe is untied.

**Mindy.** Dennis!

**Dennis.** What?