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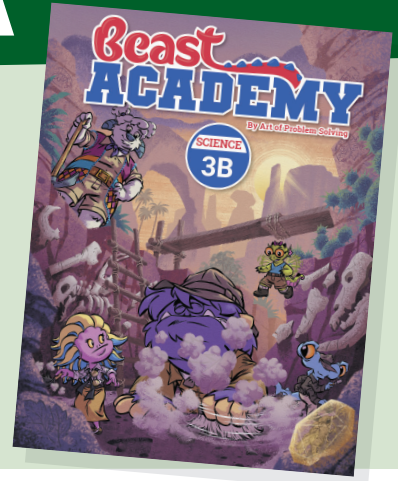
# HOW TO USE THIS BOOK

## BEAST ACADEMY SCIENCE 3B

Beast Academy 3B is part of a series of science books that is currently planned to span grades 3 through 5 when complete.

We are always creating new books, materials, and resources to complement this book.

Check the Science 3B page of [BeastAcademy.com](http://BeastAcademy.com) for the most up-to-date information and resources available.

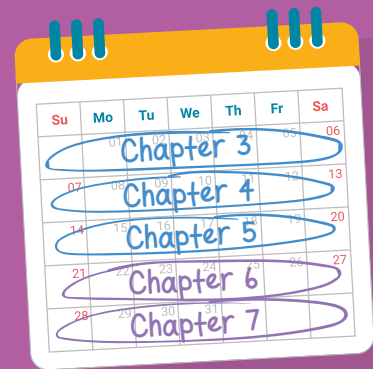


## PLANNING

Beast Academy Science 3B is part 2 in a two-part Level 3 science series. Together with 3A, Level 3 offers a complete science curriculum for motivated and curious 3rd graders.

Level 3 includes 32 chapters (16 per book). To complete the curriculum in a typical 36-week school year, we recommend completing 1 chapter each instructional week.

If time is limited, students may skip enrichment activities marked with a + in the contents section at the beginning of each chapter.



## ACTIVITY TYPES

### Comic Guide Sections

BA characters discuss important science concepts and ideas. Readers answer questions along the way.



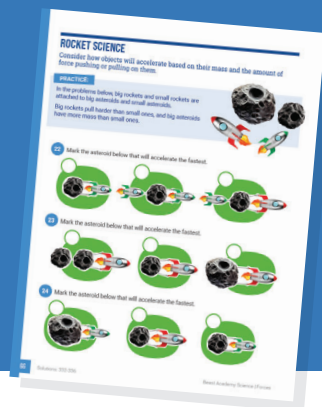
### Labs

One of the best ways to learn science is to do science! Students investigate how things work on their own.



### Practice Pages

A variety of question types including puzzles, activities, and games help students learn to think like scientists.



## QUESTION TYPES

Every question students are expected to answer is numbered and has an answer or brief discussion in the back, beginning on page 326.

There are a wide variety of question types including ones marked by the icons below:

### ★ CHALLENGE:

Starred questions and tasks have hints in the back starting on page 322.

### 💬 DISCUSSION:

Find a partner or group and work through these questions together.

### 🖥️ RESEARCH:

Students will need access to online resources to answer these questions.

### 📝 JOURNAL:

Collect answers to these questions in a separate science journal notebook.

## STANDARDS

BA Science 3B content is aligned to the Next Generation Science Standards (NGSS), but often goes well beyond what is typically expected of students. Together with 3A, Level 3 will cover all of the concepts, practices, and standards outlined for grade 3.

Among the NGSS standards covered in this book are:

### Forces and Interactions (Unit 1: Chapters 1-5)

- Investigating balanced and unbalanced forces (3-PS2-1)
- Exploring magnetic interactions between objects (3-PS2-3)
- Using magnets to solve a design problem (3-PS2-4)



### Weather and Climate (Unit 2: Chapters 6-10)

- Describing the world's climates (3-ESS2-2)
- Interpreting fossil evidence of ancient organisms (3-LS4-1)



### Inheritance and Variation of Traits (Unit 3: Chapters 11-16)

- Comparing the life cycles of different organisms. (3-LS1-1)
- Interpreting why traits vary in related individuals. (3-LS3-1)
- Identifying evidence that environment influences traits. (3-LS3-2)
- Examining how variations in traits can affect survival. (3-LS4-2)
- Recognizing that beneficial traits depend on the habitat. (3-LS4-3)



# MATERIALS

## SCIENCE JOURNAL

Every student should collect their work in a science journal. Any notebook will do.

## COMMON ITEMS (Used in several activities)

- Scissors
- Water
- Paperclips
- Tape
- String
- Standard deck of cards
- Printer paper
- Assorted coins
- Large table

## CHAPTER 1

- Paper cups
- Sink
- Push pin
- Empty can
- Pitcher for water

## CHAPTER 2

- Identical unopened cans
- Balls (golf and ping pong)
- Cup
- Blindfold
- Empty gallon jugs
- Bean bag

## CHAPTER 3

- Two balloons, one with helium
- Water balloons
- Vehicle and adult driver
- Bed sheet

## CHAPTER 4

- Meter stick
- Sheets of at least four different materials (foil, wax paper, etc.)
- Index card

## CHAPTER 5

- Refrigerator magnets
- Shoe box
- Bar and/or disc magnets (optional)
- Stopwatch or timer
- Magnetic compass
- Assorted metallic and non-metallic items
- Bowl for water

## CHAPTER 6

- Various liquids (vegetable oil, milk, mouthwash, vinegar, or dish soap)

## CHAPTER 7

- Glass of water
- Spoon
- Sugar

## CHAPTER 8

- Warm water
- Balloons
- Medium plastic bottle
- 1 tablespoon of sugar
- 2 packets of dry yeast
- Large bowl
- Camera (optional)
- Baking soda
- Vinegar

## CHAPTER 10

- Modeling clay or playdough
- Several small plastic toys
- White glue

## CHAPTER 12

- 24 coins or tokens
- Crayons or colored pencils
- Mirror (optional)

## CHAPTER 13

- Modeling clay or playdough
- Baby photos

## CHAPTER 16

- Two standard dice
- 20 each of two different types of coins

Grogg (me)  
"The Inventioneer!"

Invented the  
battery-powered  
hairbrush.

(And battery powered  
scissors to get it out  
of my hair.)



Winnie

"The firecracker"

Got mad when I told  
my see-food joke at  
lunch.

Lizzie

"The bookworm"

Reads a LOT!  
Even comics.

But she calls them  
"graphic novels."

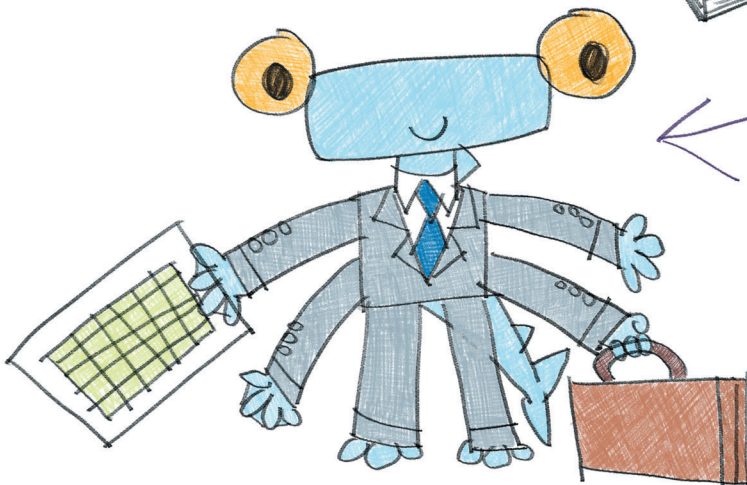


Alex

"The executive"

Knows a LOT about  
spreadsheets.

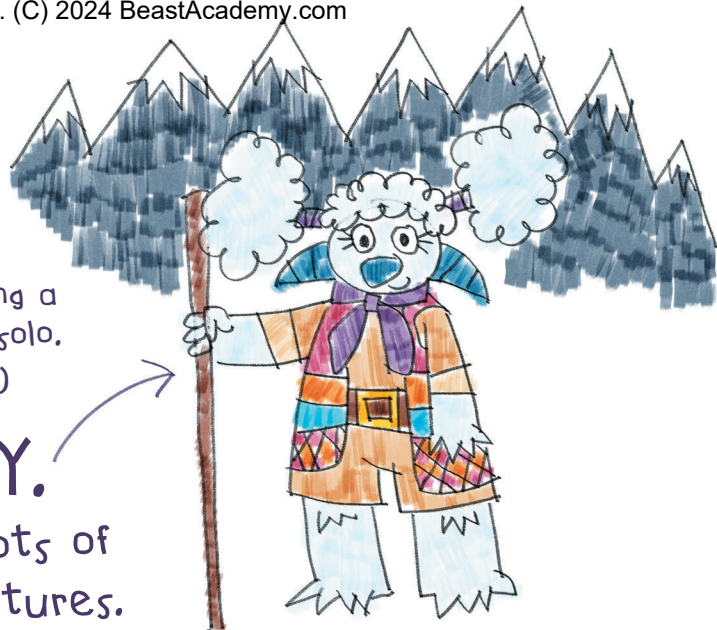
Colored this drawing  
I made of him.





**Mr. E.**  
Plays in a  
rock band!

Once fell asleep during a  
15-minute xylophone solo.  
(More like Mr. Z's!)



**Ms. Y.**

Has lots of  
adventures.

Usually makes it back without getting lost.



**Zak**

Goes to the upper school.

Let me drive the remote-controlled sofa  
he built once. (Guess what - it floats!)

**R&G**

Take(s) care of the school.

I give the blue one fist  
bumps that explode.

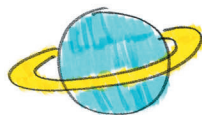


**Dr. Hau**

Really old.

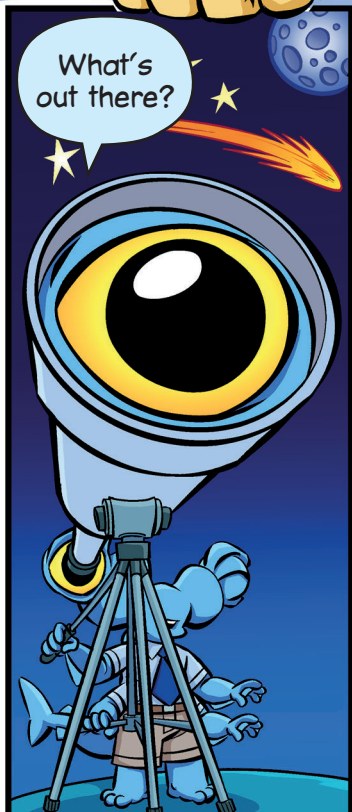
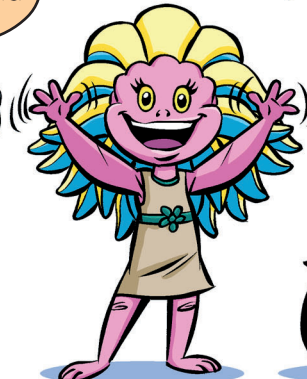
Like a bazillion years.

Says she always wanted  
to be an asteroid when  
she was a kid.

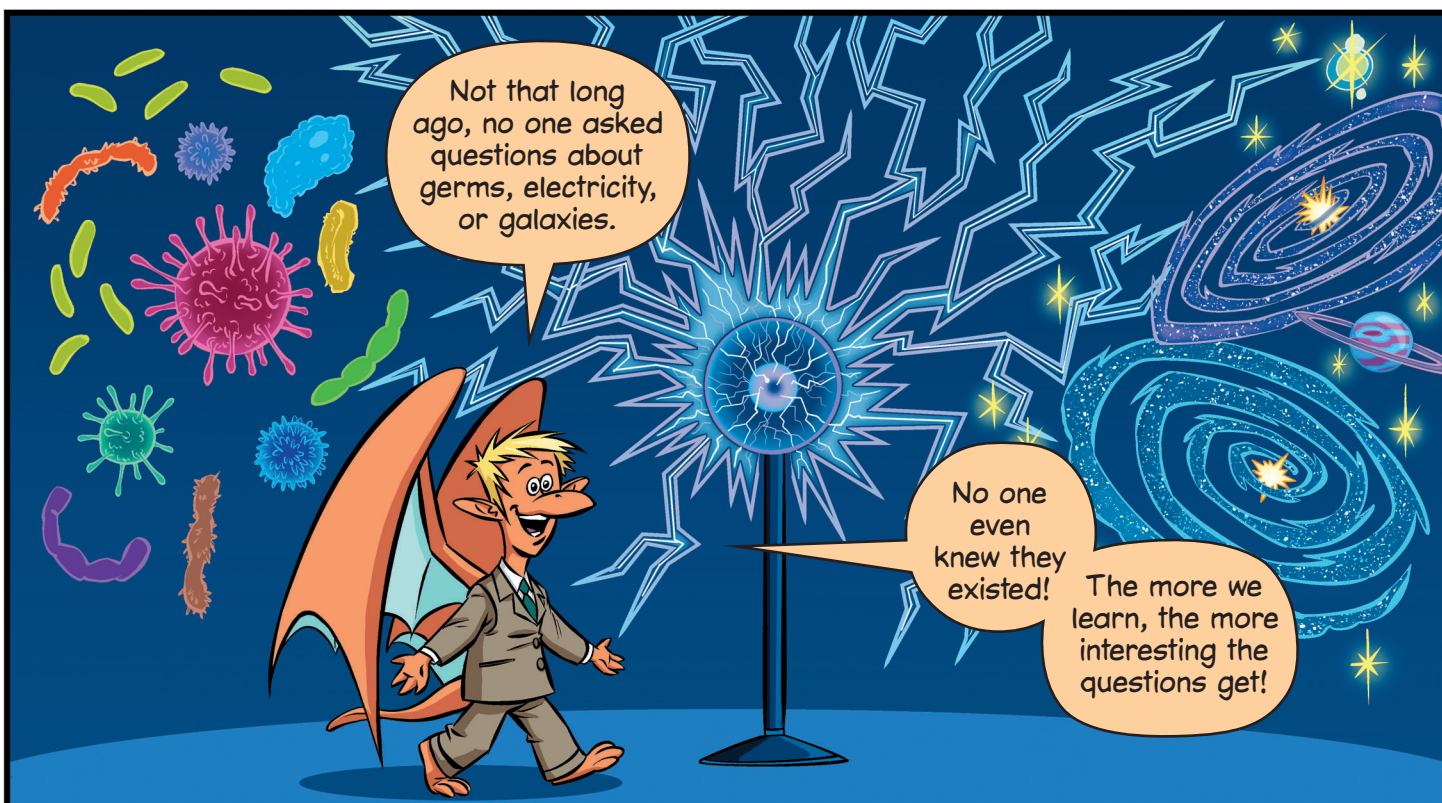
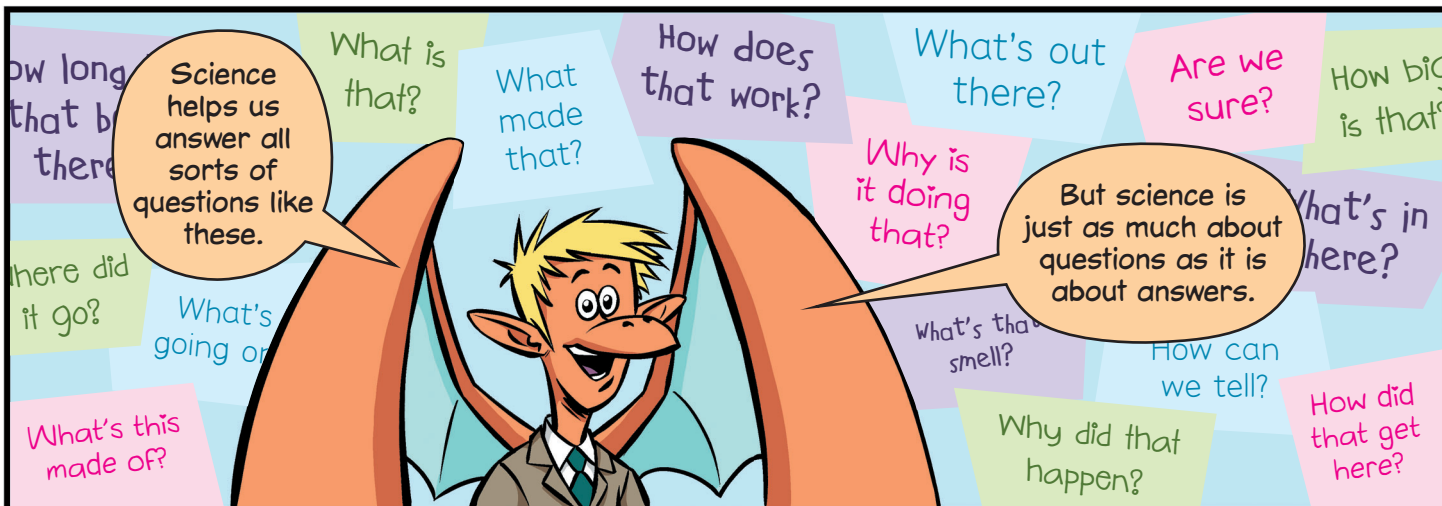




...eager to discover the secrets of the world around them.







THE BEAST ACADEMY WORLD WORKS JUST LIKE OURS. THE CREATURES MAY LOOK DIFFERENT, BUT THE WAY THINGS WORK AND WHAT THEY'RE MADE OF ARE THE SAME AS HERE ON EARTH!