

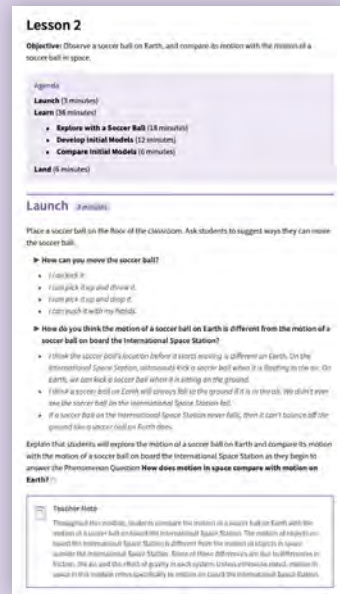
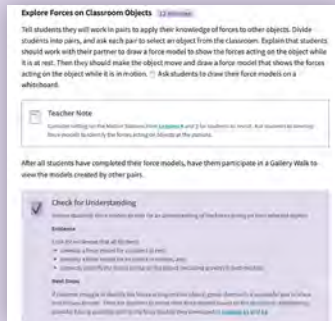
Created by our team of teacher-writers and experts, *PhD Science*® inspires students to wonder about the world and empowers them to make sense of it. With *PhD Science*, students learn to think and act like real scientists by conducting investigations in which they collect and analyze data and evidence. Every module includes hands-on investigations and a Science Challenge or an Engineering Challenge to give students an opportunity to collaborate with peers, practice problem solving, and build and connect content knowledge.

### Activity Before Concept > Concept Before Terminology Approach

Rather than simply memorizing—and quickly forgetting—definitions, *PhD Science* students acquire deep and lasting comprehension of scientific concepts by doing hands-on activities and creating evidence-based explanations. The curriculum uses an Activity Before Concept > Concept Before Terminology (ABC > CBT) approach, so students engage in activities to develop conceptual understanding before terminology is introduced.

### Engaging in the Science and Engineering Practices

Activities in lessons may range from drawing a model to planning and carrying out an investigation.



Examples from Level 3 Module 4: Forces and Motion

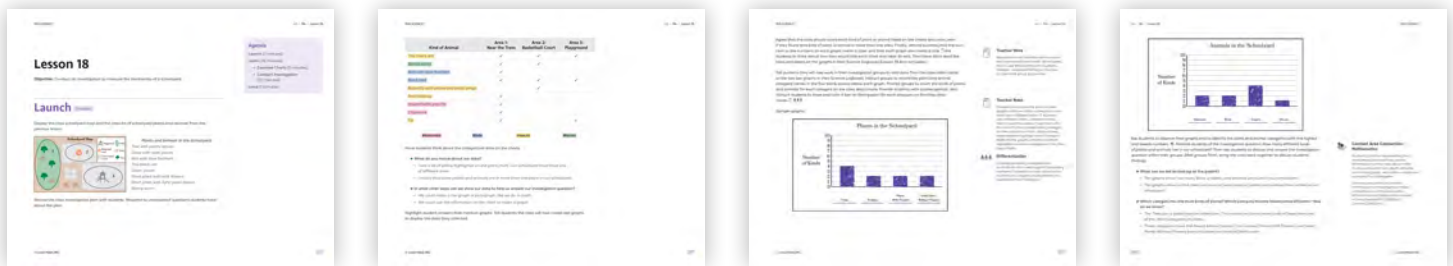
### Application of Concepts

In addition to the investigations embedded throughout the program, every module challenges students to apply science concepts in either a Science Challenge or an Engineering Challenge. Instead of simply memorizing terms or watching videos of others applying science knowledge, students put what they have learned into action to answer questions and solve real-world problems, applying scientific processes in new contexts. In these challenges, students work with their peers and present their findings to the class.



## Science Challenge

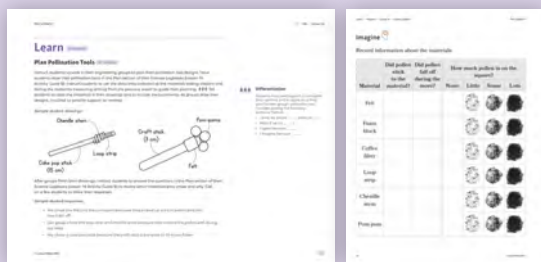
Students conduct real-world investigations to answer questions. An example comes from Level 2 Module 4 where students carry out an investigation to determine the number of different kinds of living things in their schoolyard. Students plan and make their observations of plants and animals, then identify and record the number of different species within selected areas of the schoolyard, and finally compile data.



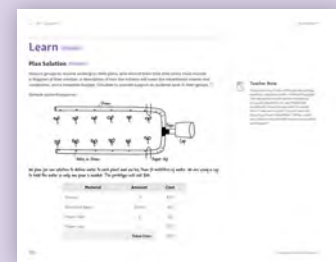
## Engineering Challenge

Students engage in the engineering design process while considering the criteria for success and the limitations imposed by constraints. All students have the opportunity to find creative solutions to a shared problem.

In Level 2 Module 3, students develop pollination tools that can help humans pollinate plants in the absence of pollinators. In Level 5 Module 3, students develop solutions to conserve water used for agriculture.



Level 2 Module 3



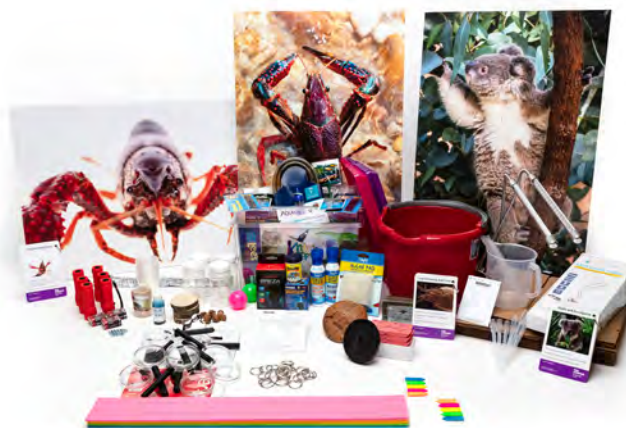
Level 5 Module 3

## Materials Kits

Materials kits with cost-conscious consumable and non-consumable supplies are available by module or level. Kits are designed for six investigation groups per classroom (consumable supplies available for order in refill kits). The K-2 kits contain items that only Great Minds® provides, such as Knowledge Deck™ cards and posters. These combine carefully crafted informational text with visually arresting images. Students interact with the cards during lessons, collecting a deck of knowledge about different phenomena.



Scan to learn more



Level 1 Module 1



Level 1 Module 1