



## ELEMENTARY SCIENCE OLYMPIAD SIGNATURE EVENTS

# Write It Do It

## How to use this Kit

The activities in this kit were designed to encourage hands-on learning and exploration for students in grades K-6, either at home or at school. Some students (grades 3-6) may be able to manage the activities on their own, and some students (grades K-2) will need an adult presence for part or all of the activities - you know your student best. No matter what, we hope that this kit helps to spark some curiosity in your student that grows into a lifelong love of science.

### Tips on Supporting Your Student

- Skim through the materials and activities beforehand to get a sense of what support your student might need, as well as what common household items they may need for the activities. Ensure there are enough of these materials in case they make a mistake (which they will) or they want to extend the activity (which we hope they will).
- Encourage your student to work through mistakes and challenges without fixing things for them. You can say things like: "That's an interesting result. Is that what you expected?" or "What do you think will give you a different result next time?"
- Model not knowing all the answers. Science is all about exploration and experimentation. This is a wonderful opportunity to show your student that it's OK to not know an answer and to spend some time trying to figure it out.
- Help your child extend their learning beyond these activities by pointing out similar concepts in the real world, talking about careers that utilize the science concepts in the activity, and helping them find high-quality resources (books, websites, online videos) for further exploration.

**Note:** If you are a classroom teacher or an afterschool program provider, we have included recommendations for large and small group modifications and competition extensions.

## About Science Olympiad

For more than 35 years, Science Olympiad has been dedicated to supporting science, technology, engineering and math (STEM) learning and teaching across the United States. As a non-profit organization, we support schools, teachers, and families through curriculum, science competitions, and learning opportunities for the elementary, middle and high school grades. We are helping to grow the next generation of STEM innovators, researchers and enthusiasts.

**Elementary Science Olympiad** is the perfect complement to any K-6 science program. Support your normal classroom routine with an all-building Science Olympiad Fun Day, or bring in experts and parent volunteers to run a Science Olympiad Fun Night. If you want to develop a feeder program, run a grades K-6 competitive tournament, just like the older kids, and with many of the same rules, just scaled down to size.

Find out more about the organization and how to start a program at your school at: [soinc.org/programs/elementary](https://soinc.org/programs/elementary).



# Write It Do It

## Activity 1

### Objective

- Participants will understand the importance of precise language.

### Notes for Parents & Teachers

- None needed

### Notes for Teachers

- Write It Do It has ties to Common Core Writing Standards and is a good activity to do over and over because of the importance of “precise” writing.
- Students should be instructed to bring a variety of objects from home, for example building blocks, stickers, candy, kitchen gadgets.

### Set Up

- None needed

### Materials

- 2 sets of random materials from your home (6 items is perfect for this activity)
- Paper
- Pencil

### Procedures

Precise language is a vocabulary of precise nouns and vivid verbs, and it helps you create strong mental pictures and avoid wordiness. *Write It Do It* is an activity that will help you get better at using precise language by giving directions to your partner about what they need to do to create a structure.

For example, while writing directions for Write It-Do It, if you were to say, “Put the pipe cleaner on the plate,” your partner might be confused. Which pipe cleaner should they use? Where on the plate should the pipe cleaner go? Does it lay on the plate or does it get attached to the plate? Precise words that give specific directions are important. Think about the following:

- Use EXACT directions: right, left, up, down, bottom left, upper right, center, etc.
- Use the names of colors and shapes
- Use compass directions such as “on the south side of the paper”, with north always being in front of you
- Compare your structure to something you know: “At this point, the structure will look like a little house.” “It will look like two legs are coming out of it.”
- Use degrees, math terms, geometry, numbers and measurements, if appropriate-“Put the red toothpick down parallel to the blue one.” “Place the yellow rod above the green rod.”

Using the 6 items you have, create a “masterpiece.” If you have colored building blocks, put them together in a random way. Have your partner build their own “masterpiece,” different from yours.

- Practice writing some of the language from above when describing your masterpiece. “The 6-dot blue building block is placed on top of the yellow 8-dot building block with 2 dots showing on the east side of the structure.”
  - Does your partner understand what you’ve written? Is your language “precise” enough?



### **Modifications for Multiple Participants**

- This activity needs to be done with a partner

### **Modifications if Event being done Competitively**

- Won't be done competitively

### **Accommodations for Diverse Learners**

- Provide a word bank of descriptive words
- Have the participant dictate to an adult. The adult will write exactly what the participant dictates without change or input.



# Write It Do It

## Activity 2

### Objective

- Participants will work with a partner to reproduce a structure exactly, using the written directions of one of the partners.

### Notes for Parents & Teachers

- Two separate spaces are needed for participants to work in so they can't see each other's structures. You can also provide a divider
- Stickers can be used, as long as you have a second set for the builder
  - Just about anything can be used!
- Participants are not allowed to
  - Talk
  - Draw pictures
  - Use symbols

### Notes for Teachers

- Write It Do It has ties to Common Core Writing Standards and is a good activity to do over and over because of the importance of "precise" writing.
- It is easiest to have DIFFERENT structures for each group of partners so you have many different structures and can do this activity over and over without having to prepare new materials.
- Colored building blocks are good to use for this activity because many children are familiar with them.
- Pattern blocks are a great item to use for this activity. If you have access to a die cutting machine that has pattern blocks, you can glue the patterns onto paper and laminate them. Then the students can use actual pattern blocks.
- In order to eliminate down time, each set of partners can be given a different structure, at the same time, and asked to write directions, at the same time. Then, once they are both done, directions can be swapped and each set of partners given the building materials that they need.

### Set Up

- Someone, besides the 2 participants, needs to create the structures and gather the second set of materials, ahead of time.

### Materials

- Small objects or construction materials to make simple structures
- An exact set of the parts used to make the simple structure, as listed above, so that each partner in the pair has the exact same items to use
- Paper
- Pencil

### Procedures

Decide which partner will be the Writer and which partner will be the Builder. The Builder needs to leave the room (or stay behind the divider) while the Writer is creating the directions for the Builder.

- There cannot be any communication between the two partners.
- No diagrams or other drawings are allowed.

- It is the Writer's job to write, on paper, directions for how to EXACTLY put together the items in the bag when given the same materials.
  - Use precise and descriptive language.

When the Writer is finished, hand the Builder his or her bag of materials and the written directions. Be sure that the Builder does not see the finished structure that the Writer used to write from.

- No questions or clarifications can be asked or given.
- The Builder should build the structure, based on the Writer's directions.

When the Builder is finished, compare the 2 structures. Discuss the results.

### **Modifications for Multiple Participants**

- This activity needs to be done with a partner

### **Modifications if Event Being Done Competitively**

- Give participants a time limit. 30 minutes is an appropriate amount of time.

### **Accommodations for Diverse Learners**

- Provide an electronic version of participant's partner's written description.
- Provide an auditory recording of the participant's partner's written description for participant to listen to.

### **Next Generation Science Standards Addressed**

The Next Generation Science Standards (NGSS) associated with the lesson are included to represent the specific learning outcomes that students are working towards during the course of this lesson. Teachers use these standards to guide their instructional planning and selection of learning activities. In particular, these standards help teachers determine the specific science content is developmentally appropriate for a student as well as how it should be sequenced over the course of a student's time in school.

For parents and guardians, this information is provided so you can see some of the "big ideas" that your student is working towards in this lesson. Additionally, these standards show you how the different topics in science combine to help inform your collective understanding of issues. We have selected the NGSS as our reference for all Elementary Science Olympiad Signature Events because they represent the best national thinking around science learning for K-12 students. Also, many states have either adopted the NGSS as their state science standards or revised their state science standards to reflect information contained in the NGSS. If you would like to learn more about the NGSS, you can find additional information, including which states have officially adopted the NGSS, at [nextgenscience.org](http://nextgenscience.org).

### **Write It Do It**

- Engineering and Design: 3-5-ETS1-2
- Matter and its Interactions: 5-PS1-3