

**FAM School Workshop:
Seek & Sketch
Grades 4 – 12**

Objectives

- Students will understand the importance of the field of scientific illustration for artists, historians, and scientists alike.
- Students will learn the history of scientific illustration, from the cave paintings at Lascaux to the human body sketches by Leonardo da Vinci, and will understand the various reasons for why these images are made.
- Students will practice their observation and data collecting skills by making sketches and producing an enlarged final drawing using the grid method.

Procedure

1. The students will take a look through the history of scientific illustration by viewing objects in the museum's collection and by joining a museum teacher for a special presentation on the subject. Students will learn why scientific illustrations are made, why they are important, and names of some of the more famous scientific illustrators in history.
2. The students will then be brought to the activity room, where they will look at various specimens—shells, plants, and animals—to make quick sketches of them.
3. Each student will then select one object to make a detailed drawing of. They will be given a length of time to make as detailed a drawing as they can, and on a separate sheet they will write down a list of adjectives that describe the object (ex. Smooth, small, red, etc.).
4. Once the drawings are done, the students will be shown how to create a grid across their drawing. They will make a grid with one inch squares, with one axis labeled with letters (A,B,C, etc.) and the other axis labeled with numbers (1,2,3, etc.).
5. The students will be given a larger piece of paper and will recreate the grid with larger squares (2 or 3 inches). They will then start transferring the small drawing to the large paper, working square to square. Depending on the amount of time left in the program, the students will either finish their large drawings at the museum or will take them along to work on at school or home.

Learning Standards Addressed

Mathematics, Science, & Technology

- Use mathematical analysis, scientific inquiry, and engineering design, as appropriate, to pose questions, seek answers, and develop solutions
- Understand and apply scientific concepts, principles, and theories pertaining to the physical setting and living environment and recognize the historical development of ideas in science
- Apply technological knowledge and skills to design, construct, use, and evaluate products and systems to satisfy human and environmental needs
- Understand the relationships and common themes that connect mathematics, science, and technology and apply the themes to these and other areas of learning

The Arts

- Actively engage in the processes that constitute creation and performance in the arts (visual and verbal) and participate in various roles in the arts
- Be knowledgeable about and make use of the materials and resources available for participation in the arts in various roles
- Respond critically to a variety of works in the arts, connecting the individual work to other works and to other aspects of human endeavor and thought
- Develop an understanding of the personal and cultural forces that shape artistic communication and how the arts in turn shape the diverse cultures of past and present society

Social Studies

- Use a variety of intellectual skills to demonstrate their understanding of the geography of the interdependent world in which we live—local, national, and global—including the distribution of people, places, and environments over the Earth's surface

English Language Arts

- Read, write, listen, and speak for information and understanding, for literary response and expression, for critical analysis and evaluation, and for social interaction

Seek & Sketch: Scientific Illustration Pre-visit Activity

Observation is important to the scientific illustrator along with their ability to share what they observe with others. To demonstrate how images are important for individuals to understanding of a specimen have the students find an example of a specimen from a book, magazine, or the internet. **THEY MUST NOT REVEAL THE IDENTITY OF THEIR SPECIMEN TO ANYONE!!!**

Have the students' partner up for the second part of this activity. The students will take turns offering adjectives to their partner that describes the specimen they've chosen. From this description, they must create a composition sketch of what they think the specimen looks like.

After both students have completed their sketches, they can compare the image of the actual specimen to what their partner thought the specimen looked liked.

The class can then discuss what further information would have been useful in creating a more representative sketch of the specimens.

Seek & Sketch: Scientific Illustration
Post-visit Activity

1. Now that the students have done their scientific illustrations and have learned the grid method have them choose to either enlarge or shrink their illustration using the method.
2. Students can research the specimen they drew. Have them find the scientific name of their specimen as well as label the different parts of their specimen.
3. Field Guide Activity: Have each student either choose or you can assign them a specimen that can be found in the local area. They can research the specimen and put together a page of a field guide with information regarding characteristic such as color, habitat and range. They would also have to produce a scientific drawing to show what their specimen looks like.