

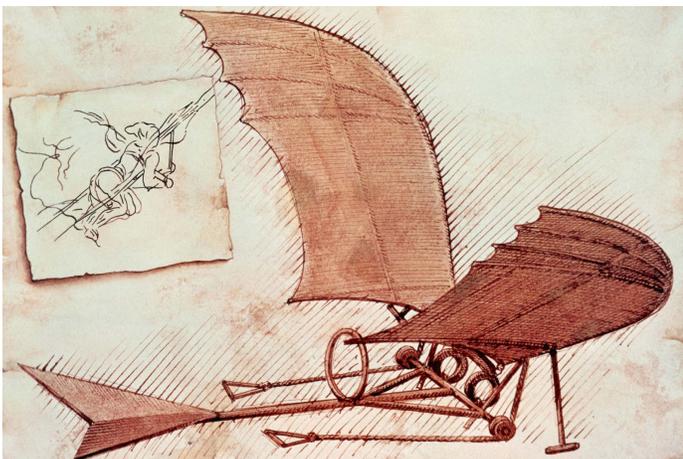
### Objectives

- Describe the European Renaissance and how Leonardo da Vinci embodied the culture of the era
- Discuss the new invention and explain how it helps solve a problem facing people today
- Compare and contrast Leonardo da Vinci's flying machines and Dennis von Smith's flying machine sculptures
- Deconstruct a Dennis von Smith sculpture and a Leonardo da Vinci flying machine sketch and use the pieces to create a new invention

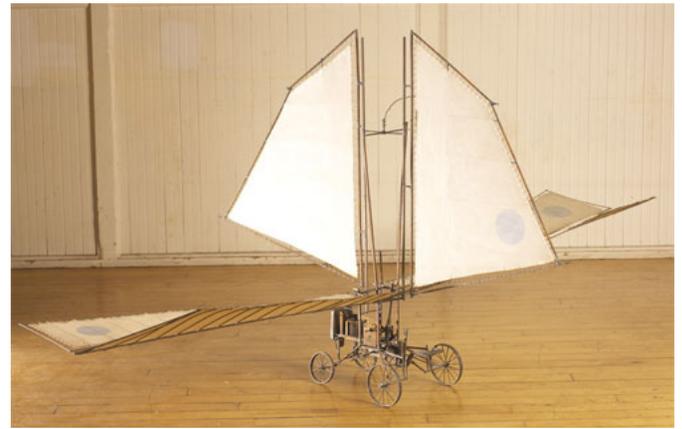
### Background

Leonardo da Vinci was born in Italy in 1452 and came of age during the Italian Renaissance, a period of tremendous cultural and scientific development in Western Europe. As one of the most prolific artists and inventors of the era, Leonardo embodied the spirit of the age. He fervently sought to understand the mechanics of the world around him and translated his observations into works of art and engineering. Leonardo was a prolific artist and scientist as well as a musician. He filled stacks of notebooks with sketches of the natural world, drawings of human and animal anatomy, and blueprints for sophisticated inventions. Leonardo was consumed by the human potential for flight and some of his most notable sketches depict his designs for different types of flying machines.

Dennis von Smith was born in Utah in 1942. He has lived most of his life in Utah with the exception of a few years spent studying abroad in Denmark where he earned his graduate degree in fine art. Dennis von Smith's work ranges from sculptures of children to abstract oil paintings to intricate flying machines. Whether sculpting or painting, Dennis von Smith uses his art to engage with themes of family, memory, and childhood.



Leonardo da Vinci, Flying Machine Sketches



Dennis Von Smith, *Aeroplane Contraption*, 1975

### Materials

- Images of Leonardo da Vinci's flying machine sketches (See Sources Section for web links)
- Images from Springville Museum of Art's Permanent Collection
- Sketchbooks
- Pencils
- Construction Materials (scrap metal, magnets, fabric, scrap wood, etc.)
- Binding Materials (glue, glue gun, rope, yarn, paper clips, etc.)

### Images from the Museum

- Dennis Von Smith, *Aeroplane Contraption*
- Dennis Von Smith, *Barn Swallow*  
(Images available at end of lesson plan or at [smofa.org](http://smofa.org))

### Utah Core Standards

Social Studies:

Standard 2

Students will understand the transformation of cultures during the Middle Ages and the Renaissance and the impact of this transformation on modern times.

Standard 2 Objective 4

Explain the importance of the Renaissance as a rebirth of cultural and intellectual pursuits.

4b. Identify leading Renaissance artists and thinkers and their contributions to visual arts, writing, music, and architecture (e.g. Machiavelli, Michelangelo, Leonardo da Vinci, Palestrina, Shakespeare, Tallis).

Visual Arts:

Standard 4

Students will interpret and apply visual arts in relation to cultures, history and all learning.

Objective 1a:

Compare/contrast art forms, past or present, in terms of subject matter, culture and history.

## Discussion

Leonardo da Vinci and Dennis von Smith lived in very different eras and parts of the world. However, da Vinci's flying machine sketches and von Smith's flying machine sculptures have some important similarities. In what ways do the flying machines seem similar? In what ways do they seem different? Can you tell that da Vinci's sketches are from the Renaissance and von Smith's sculptures were created in the present day? Why or why not? Do Leonardo da Vinci's or Dennis von Smith's flying machines resemble any kind of flying machines we have today such as airplanes, helicopters, or hang gliders?

In creating his flying machine, Dennis von Smith looked to the past by remembering his childhood and how important imagination was to him as a young boy. Have you ever used your imagination to invent something? Leonardo da Vinci, on the other hand, looked to the future when designing his flying machine in the hopes that he could help humans fly. Have you ever wanted to invent something that would make it easier for humankind to achieve something great in the future?

There is evidence that Leonardo da Vinci wanted to use his sketches to build and test an actual flying machine but wasn't able to do so in his lifetime. Contrarily, Dennis von Smith's constructions sit in the galleries of the Springville Museum of Art and were never intended to fly in the air like actual airplanes. Do you prefer Leonardo da Vinci's practical approach to his flying machine or do you like Dennis von Smith's more artistic approach? Why?

## Learning Activity

Choose one of Leonardo da Vinci's flying machine sketches and one of Dennis von Smith's flying machine sculptures. First, look closely at Dennis von Smith's sculpture. Take out your sketchbook and disassemble his flying machine by drawing each part separately as if you were actually taking it apart by hand (e.g. you might have a drawing of a wheel on your page and below that a drawing of a wing, etc.).



Dennis Von Smith, *Barn Swallow*, 2002

Now, look closely at Leonardo da Vinci's sketch and take it apart by drawing each piece of his machine separately. You should now have the pieces from both machines sketched in your notebook. These individual drawings are your building blocks for designing your own invention. You can use these building blocks to invent a new type of flying machine or you can use them to invent something altogether different. However, your invention has to solve a problem that humans face today. This problem can be something as simple as waking up on time for school to something more complex like global warming.

Use some or all of the pieces of von Smith and da Vinci's machines to sketch your invention. This sketch is your blueprint and will help you create a three-dimensional version of your invention. Using the materials provided (e.g. scrap metal, wood, fabric, rope, etc.) construct a sculpture of your invention. Write a one page description of your invention and what problem you hope to solve with your creation.

## Assessment:

Have students present their inventions to the class and describe which elements of da Vinci's flying machine and which elements of von Smith's flying machine they used and why. Students will also explain the contemporary problems they hope to solve with their inventions.

## Extension Activity

Host an invention convention wherein each class member creates a booth displaying their invention, an outline of their creative process, and a description as to why their creation would benefit the community. Invite parents and peers to attend the convention and learn about each student's contributions.

## Sources

Metropolitan Museum of Art: Leonardo da Vinci [http://www.metmuseum.org/toah/hd/leon/hd\\_leon.htm](http://www.metmuseum.org/toah/hd/leon/hd_leon.htm)

Museum of Science: Leonardo da Vinci <http://legacy.mos.org/leonardo/>

Sketches of Leonardo da Vinci's flying machines <http://www.angelfire.com/electronic/awakening101/leonardo.html>

Three-dimensional models of Leonardo da Vinci's flying machines <http://www.museoscienza.org/english/leonardo/invenzioni/>

Museo Nazionale Scienza e Tecnologia Leonardo da Vinci <http://www.museoscienza.org/english/>

Leonardo da Vinci: Creative Genius Lesson Plan <http://edsitement.neh.gov/lesson-plan/leonardo-da-vinci-creative-genius#sect-introduction>



Dennis Von Smith, *Aeroplane Contraption*, 1975



Dennis Von Smith, *Barn Swallow*, 2002