Modern Figures Toolkit

NASA EDUCATION

STEM Is the Future—How Will You Get Involved?

Inspire Engage, Educate, Employ.
Modern Figures Activities

Locate lesson plans and articles by topic and grade level related to Katherine Johnson and her fellow Human Computers below.

**Let’s Go to Mars: Calculating Launch Windows**

Topic: Math  Grades: 9-12  
NGSS: HS-ESS1-4  
CCSS: Math.Content.HSG.GPE.A.3, Math.Content.HSG.C.A  

Students use planetary-position data and algebraic computations to determine a launch opportunity to Mars.  
http://go.nasa.gov/2glXeF1

**What is an Orbit?**

Topic: Science  Grades: 4-8  
NGSS: MS-ESS1-1  
CCSS: ELA-Literacy.RST.6-8  

Students learn about the shape of an orbit, the effect of gravity on an orbit, and where satellites orbit the Earth.  
http://go.nasa.gov/2glUBRn

**Rover Races**

Topics: Engineering/Programming  Grades: 3-12  
NGSS: 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3, MS-ETS1-1, MS-ETS1-2, MS-ETS1-3, MS-ETS1-4  
CCSS: ELA-Literacy 3.1 - 11.12.1  

Students simulate operating a rover on Mars by providing directions to navigate the Martian terrain.  
http://go.nasa.gov/2glX5qX

**NASA Langley & Human Computers**

Topic: History  Grades: 9-12  

Students explore the social impact of human computers at NASA Langley during the 20th century.  
http://go.nasa.gov/2glXEsI

**Gravity: It’s What Keeps Us Together**

Topic: Math  Grades: 6-12  
NGSS: MS-ESS1-1, MS-ESS1-2  
CCSS: Math.Content.HSG.GPE.A.3, Math.Content.HSG.C.A  

Students solve 10 gravity-related problems using the distance, rate and time formula; evaluating functions; analyzing graphs; and using mathematical modeling.  
http://go.nasa.gov/2glXCRN

**Moon Phases**

Topic: Science  Grades: 1-6  
NGSS: MS-ESS1-1, MS-ESS1-2  

Students learn about the phases of the moon by acting them out. In 30 minutes, they will act out one complete, 30-day, moon cycle.  
http://go.nasa.gov/2glV2v3

**Touchdown**

Topics: Engineering/Programming  Grades: 3-8  
NGSS: MS-ETS1-1, MS-ETS1-2  
CCSS: ELA-Literacy 3.1 - 11.12.1  

Students use their knowledge of gravity, motion, and forces to design and build a shock-absorbing system.  
http://go.nasa.gov/2glX09j

**Modern Figures**

Topic: History  Grades: 3-12  
CCSS: ELA-Literacy.RH.6-12.1, ELA-Literacy.RH.6-12.2  

Students review a series of articles and resources related to Katherine Johnson and the Human Computers.  
http://go.nasa.gov/2glY6O0
Modern Figures Resources

Discover videos, historical references, and STEM materials through the links below. Each title includes the appropriate topic and grade level to inspire and educate students.

- **Pi in the Sky**
  - Topic: Math
  - Grades: 4-12
  - [http://go.nasa.gov/2glVrxj](http://go.nasa.gov/2glVrxj)

- **She was a Computer When Computers Wore Skirts**
  - Topic: History
  - Grades: 3-12
  - [http://go.nasa.gov/2glVV6B](http://go.nasa.gov/2glVV6B)

- **When Computers Were Human**
  - Topic: History
  - Grades: 6-8
  - [http://go.nasa.gov/2glYEgC](http://go.nasa.gov/2glYEgC)

- **Human Computers**
  - Topic: History
  - Grades: 6-12
  - [http://go.nasa.gov/2glVnhf](http://go.nasa.gov/2glVnhf)

- **The Science: Orbital Mechanics**
  - Topic: Science
  - Grades: 6-12
  - [http://go.nasa.gov/2gY7LF](http://go.nasa.gov/2gY7LF)

- **Addition Blastoff**
  - Topic: Math
  - Grades: 1-3
  - [http://go.nasa.gov/2gZCcp](http://go.nasa.gov/2gZCcp)

- **Aspire to Inspire**
  - Topic: Careers
  - Grades: K-12
  - [http://go.nasa.gov/2glVwBn](http://go.nasa.gov/2glVwBn)

- **The Moon and More**
  - Topic: Careers
  - Grades: K-12
  - [http://go.nasa.gov/2glV6B](http://go.nasa.gov/2glV6B)

- **She was a Computer When Computers Wore Skirts**
  - Topic: History
  - Grades: 3-12
  - [http://go.nasa.gov/2glV6B](http://go.nasa.gov/2glV6B)