# Modern Figures Toolkit

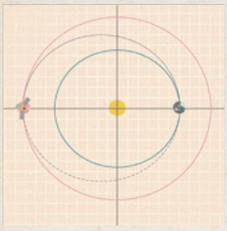
NASA EDUCATION

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/2glXzFi

## What is an Orbit?

Topic: Science Grades: 4-8
NGSS: MS-ESS-1-2
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/2glX3qX

## NASA Langley & Human Computers

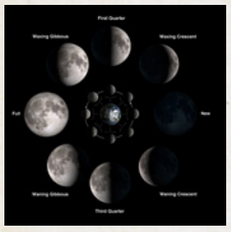
Topic: History Grades: 9-12
CCSS: ELA-Literacy.RH.9-12.1, ELA-Literacy.RH.9-10.3, ELA-Literacy.RH.11-12.7, ELA-Literacy.RH.11-12.9

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-ESS-1-2, MS-ESS-2-4 CCSS: Math.Content.HSG.GPE.A.3, Math.Content.HSG.C.A

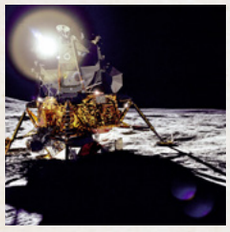
Students solve 10 gravity-related problems using the distance, rate and time formula; evaluating functions; analyzing graphs; and using mathematical modeling.
http://go.nasa.gov/2glXCRN



## Moon Phases

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

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

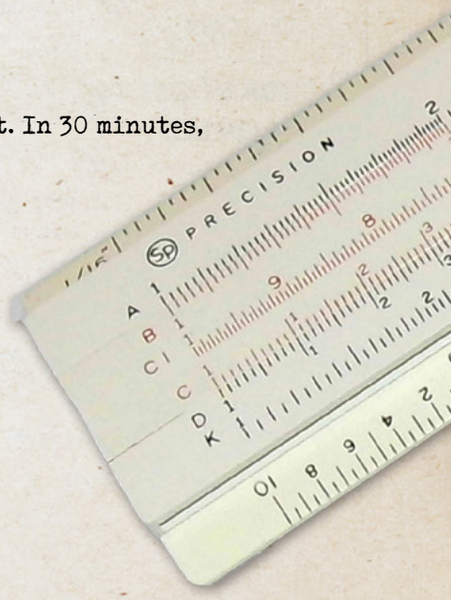
Topics: Engineering/Programming Grades: 3-8
NGSS: MS-ETS1-1, MS-PS3-1, 3-5-ETS1-2
CCSS: ELA-Literacy 3.1 - 11.12.1

Students use their knowledge of gravity, motion, and forces to design and build a shock-absorbing system.
http://go.nasa.gov/2glX03j

## 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/2glYo0G



# 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.

## Human Computers

**Topic:** History **Grades:** 6-12
http://go.nasa.gov/2glVnhf

## Pi in the Sky

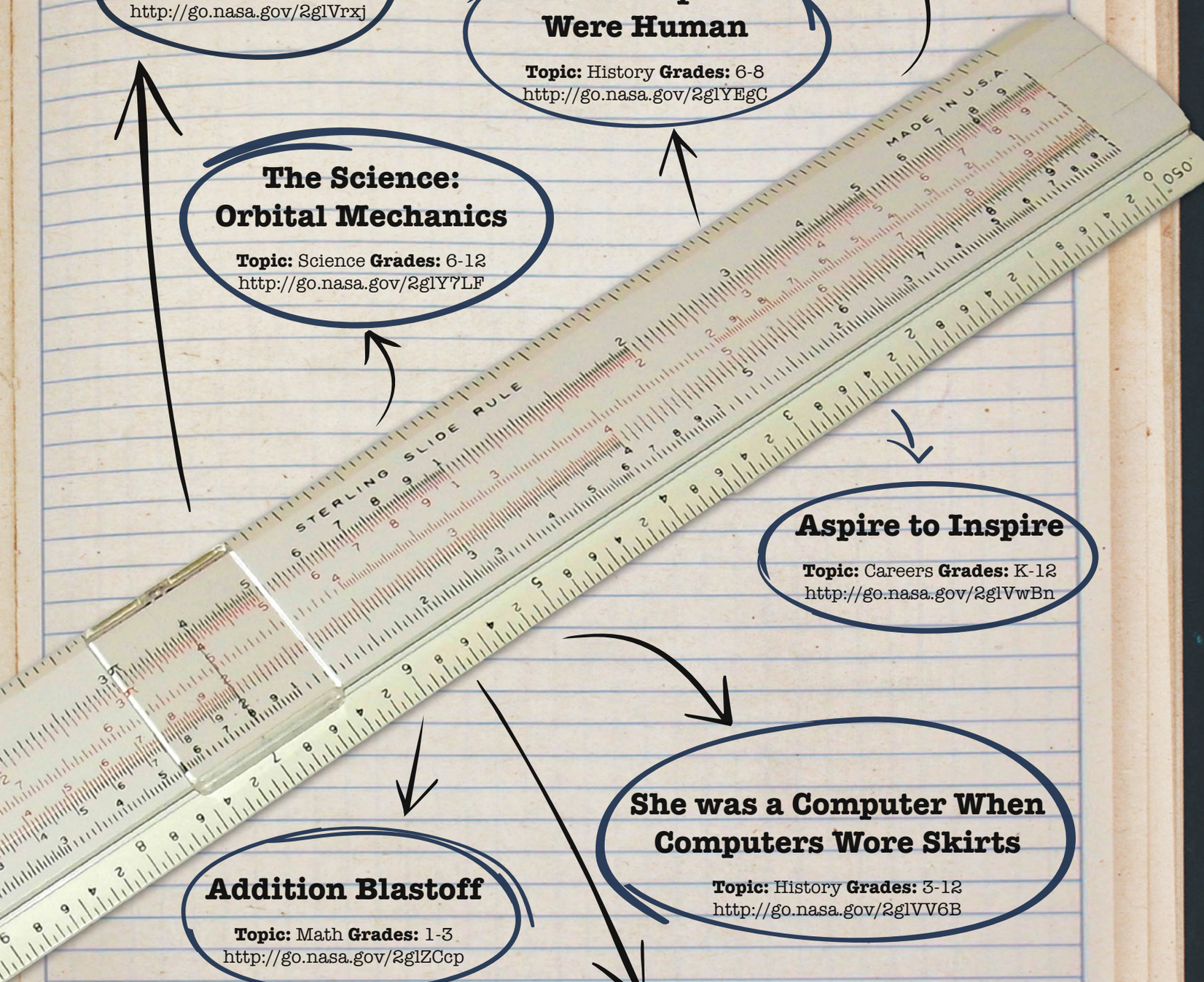
**Topic:** Math **Grades:** 4-12
http://go.nasa.gov/2glVrxj

## When Computers Were Human

**Topic:** History **Grades:** 6-8
http://go.nasa.gov/2glYEgC

## The Science: Orbital Mechanics

**Topic:** Science **Grades:** 6-12
http://go.nasa.gov/2glY7LF




## Aspire to Inspire

**Topic:** Careers **Grades:** K-12
http://go.nasa.gov/2glVwBn

## She was a Computer When Computers Wore Skirts

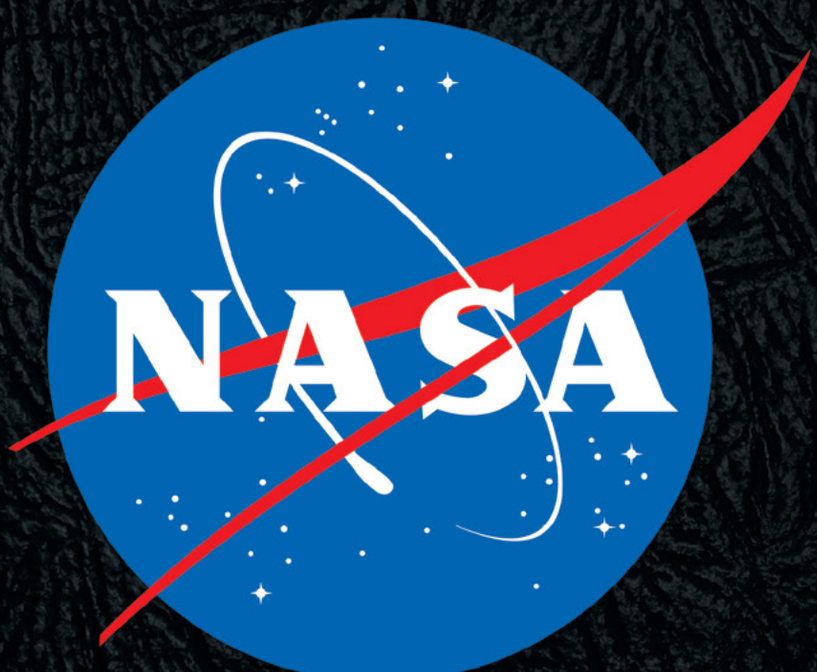
**Topic:** History **Grades:** 3-12
http://go.nasa.gov/2glVV6B

## Addition Blastoff

**Topic:** Math **Grades:** 1-3
http://go.nasa.gov/2glZCcp

## The Moon and More

**Topic:** Careers **Grades:** K-12
http://go.nasa.gov/2glYZj0

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