

NICK AND TESLA'S

SOLAR-POWERED SHOWDOWN

CURRICULUM GUIDE

BY "SCIENCE BOB" PFLUGFELDER AND STEVE HOCKENSMITH



COMMON CORE CONNECTIONS

Nick and Tesla's Solar-Powered Showdown is a fast-paced mystery with an equal mix of science and intrigue. In addition to the STEM activities found in the book itself, this curriculum guide contains Language Arts activities aligned to the Common Core—making it easier for you to teach across the curriculum in grades 4-7. These activities ask students to be careful readers without jeopardizing the fun of reading. For more information on specific standards, visit the Common Core website at www.corestandards.org.



For more information, please visit www.nickandtesla.com.

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DARING DISCUSSION QUESTIONS

Compare and contrast Nick and Tesla's personalities. How are they alike? How are they different? How do they each handle difficult situations? How do both their similarities and differences aid them in times of danger?

Instead of sleeping on normal beds while at Uncle Newt's, Nick and Tesla slept on one of his inventions. What is this invention called and how does it work?

How do the authors let readers know about things that happened in other books in the Nick and Tesla series?

What did Nick and Tesla wear around their necks? Why? Who gave the items to them? How did they work? Explain how and why Nick and Tesla set them off twice.

List, describe, and illustrate two of Uncle Newt's inventions.

How did Nick, Tesla, and company track down Mr. and Mrs. Holt to the Sun King Solar Solutions warehouse? How did the twins know their parents were there? Why were Mr. and Mrs. Holt moved right before Nick, Tesla, and Uncle Newt got there? Where were they taken?

List three characteristics of the following characters: Uncle Newt, Agent McIntyre, Agent Doyle, Silas, DeMarco, Bob, and Julie.

How did Nick, Tesla, and the rest of the gang find out Agent Doyle was one of the bad guys?

What types of rays did Mr. and Mrs. Holt's satellite produce? Why did Bob need Uncle Newt to make adjustments to the satellite, and what made Uncle Newt qualified to make these adjustments?

Give two examples of foreshadowing from the book.

Nick, Tesla, and DeMarco play Rock-Paper-Scissors in order to decide who would sneak out and launch the rover. Write the rules of Rock-Paper-Scissors in step-by-step directions.

Why was Bob angry about the "Star Wars" treaty and the president trying to achieve "peace and international goodwill?"

How did the solar-powered rover fail and succeed at the same time?

While at Brace Air Force Base, why did the kids build an alarm clock?

Which one of Mr. and Mrs. Holt's inventions did Bob steal? Why? What did he want to do with it? How was his plan foiled?

The **Daring Discussion Questions** address the following Common Core State Standards for Reading Literature:

READING LITERATURE

Key Ideas and Details

Grade 4 – RL.4.1-3

Grade 5 – RL.5.1-3

Grade 6 – RL.6.1-3

Grade 7 – RL.7.1-3

Craft and Structure

Grade 4 – RL.4.4-6

Grade 5 – RL.5.4-6

Grade 6 – RL.6.4-6

Grade 7 – RL.7.6

Integration of Knowledge and Ideas

Grade 4 – RL.4.9

Grade 5 – RL.5.9

Grade 6 – RL.6.9

Grade 7 – RL.7.9

Range of Reading Level of Text Complexity

Grade 4 – RL.4.10

Grade 5 – RL.5.10

Grade 6 – RL.6.10

Grade 7 – RL.7.10



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HIGH-VOLTAGE VOCABULARY

Review this list of vocabulary words found throughout *Nick and Tesla's Solar-Powered Showdown*. First ask students if they can guess the words' meaning by rereading each word in the context of the story. Then have them use dictionaries to check themselves and/or define the word. Also have them use each word in a sentence of their own. Because there are so many vocabulary words, you may choose to review these words over a few class periods and assign some for homework. You can also use them for your weekly list, daily word study, or spelling exercises.

INTRODUCTION

projectiles
disclaim
liability

CHAPTER 1

precocious
tenacious
laborious
malware
unwittingly
privilege
prone
horticulture
irrigation
conspiracy
maneuver
biomass
bland
bric-a-brac
treaty
pivoted
brainstorm
ominous

CHAPTER 2

sentimental
pungent
quizzical
frothy
limply
canine
frenzy
bulged
persistent
hypothermia
frantically
vivid
ruinously
imminent
altitude
whirling
rotors
trudged

scowl
remedy

CHAPTER 3

taciturn
glaring
glowering
seldom
accusingly
verging
exasperation
formality
crimson
gritted
operatives
setbacks
looming
grim
canister
gaping
prototypes
photovoltaic
alkane
forte
methane
propane
butane
wistfully

CHAPTER 4

realization
effectively
warily
banter
diversion
prattled
turbine
stampeded
retreated
rickety

CHAPTER 5

manufacturer
touché

searing
thrust
pudgy
reminiscent
stocky
absolute
monarchy
revolved
humble
tenants
industrial
skeptically
sauntered
sinister
vague
abruptly
imprudent
thwarted
sabotage
broadcast
intrigued
radiation
yowled

CHAPTER 6

stashed
unnerved
hazardous
voltage
endangering
bellowed
considerable
mournfully
rhetorical
manicured
deceiving
shabby
inconspicuous
serpentine
stealthy
hesitated
nonchalant
caper
lark

CHAPTER 7

impenetrable
jinx
hacked
infect
reassurances
hypothesis
absorbing
bleary
dismissively
recoiling
former
latter
eavesdrop
streamlined
dubious
enthused

CHAPTER 8

rummaged
tinkering
clomped
musty
current
breakthrough
evict
inhabitants
presumably
lethal
transponders
intently
withstand
demeanor
meddling
anticipated
revved
whined
ignition
sullen
slack-jawed
audited
triumphant
traitor



CHAPTER 9

stunned
nerve
inconvenience
citizen
indignantly
barreled
turncoat
distinctive
undeterred
cited
certification
smog
accurate
deceptively
decrepit
lackeys
ruthless

CHAPTER 10

ingenious
accomplices
muffled
unceremoniously
overexerted
staler
groping
writhing
muskrat
injection
flabbergasted
friction
anguished
sternly
hazy

CHAPTER 11

encircled
sardonic
malevolently
ramshackle
decaying
chortle
guffaws
ceasing
coy
nasal
pizzazz
heaved
genuinely
draped
prudent
insulted
broadened
conceded
precaution
moochers
frequency
proactive
spittle
cronies
violation
flushed
snarled
patriot
pelted
incoherently
sneer
goodwill
menacingly
contrary
expanse
featureless
wasteland

CHAPTER 12

improvised
rover
generate
decade
ablaze
diagonal
makeshift
crescent
silhouettes
hustled

CHAPTER 13

divvy
mustachioed
withering
sentiment
sour
scornful
congealed
furiously
sparse
contemptuously
tufts
dignitaries
summit
motivated
resolute

CHAPTER 14

groggily
urge
glimmer
contrast
kaleidoscopic
ironic
non sequiturs
surreptitious

mortal
cobbled
resist
delay
muster
barricade
pry
reflexively
holster
inevitable

CHAPTER 15

provoke
flunkies
guttural
swarm
brandishing
cranny
garbed
barren
smudge
incredulous
hulking
tacky
defeated
reunited

After your class is familiar with the vocabulary list, invite them to choose 20–25 words to use to write their own mystery story starring Nick and Tesla.

The **High-Voltage Vocabulary** addresses the following Common Core State Standards for Language:

Conventions of Standard English

Grade 4 – L.4.1-2
Grade 5 – L.5.1-2
Grade 6 – L.6.1-2
Grade 7 – L.7.1-2

Knowledge of Language

Grade 4 – L.4.3
Grade 5 – L.5.3
Grade 6 – L.6.3
Grade 7 – L.7.3

Vocabulary Acquisition and Use

Grade 4 – L.4.4-6
Grade 5 – L.5.4-6
Grade 6 – L.6.4-6
Grade 7 – L.7.4-6



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LABORATORY-TESTED LANGUAGE ARTS ACTIVITIES

HEADLINE NEWS

Nick and Tesla's summer vacation is filled with one adventure after another. Have your students act as reporters and write a newspaper article covering how Nick, Tesla, and company tracked down Mr. and Mrs. Holt and foiled Bob's plan. Encourage students to write snappy headlines and combine facts from the books with quotes they believe the characters would say to a real reporter. Invite students to share their articles with the class.

WHAT'S IN A NAME?

It's no secret that Nick and Tesla were named after one of history's most important inventors. Have your students use the Internet to research Nikola Tesla. Ask them to choose the five most interesting things they found out during their research. Then have them present their findings to the class in a creative way that would make Nick and Tesla proud. Spark your students' creativity by telling them they can do their presentation as a PowerPoint or an artwork, using a shoebox diorama or time capsule, or even acting it out with clay figures.

LIGHTS, CAMERA, ACTION!

The plot of *Nick and Tesla's Solar-Powered Showdown* sure would make a Hollywood hit! Have your students play the role of casting director for a movie based on the book. Ask them to think of actors and actresses to portray each character in the movie. Have them list all of the characters from the book, write a brief description of them, name who they'd cast, and explain why. After casting is complete have them create a poster advertising their movie.

TRAITOR!

There is a lot of banter about traitors in *Nick and Tesla's Solar-Powered Showdown*. Have your students research people who are considered traitors in real life. Then have them write a persuasive essay on why they think one of the so-called traitors was really a traitor or not. Have students present their arguments to the class.

ALTERNATE UNIVERSE

Ask your students to think about what could have happened if Agent McIntyre never received the message from the solar-powered rover. Then have them write an alternate ending to the book based on that premise. Spark their creativity and boost their confidence by telling them there is never a right or wrong ending to a fictional story. Invite students to share their stories with the class.

ALL HAIL THE SUN KING!

While trying to find the twins parents, Nick, Tesla, and Uncle Newt find out a lot of information about Louis XIV of France, aka Louis the Great, aka the Sun King. Have your students reread the description of Louis XIV (pgs. 74-78). Then ask them to act as a royal artist and create an artistic work based on the description. They can make a collage or crown etching, draw or paint a portrait, or even sculpt an image of the Sun King.



THINK, THINK, THINK!

Nick and Tesla (especially Nick) often don't act impulsively—they solve many problems by thinking things through. Ask your students to each choose one dilemma from *Nick and Tesla's Solar-Powered Showdown* and think through how the character(s) solved it. Then have them write and illustrate a comic depicting their thoughts. Be sure to invite students to share their finished creations with the class, and then publish their work in a classroom comic book.

The **Laboratory-Tested Language Arts Activities** address the following Common Core State Standards:

WRITING

Text Types and Purposes

Grade 4 – W.4.1-3e

Grade 5 – W.5.1-3e

Grade 6 – W.6.1-3.e

Grade 7 – W.7.1-1c, 2-2d, 3-3e

Production and Distribution of Writing

Grade 4 – W.4.4-6

Grade 5 – W.5.4-6

Grade 6 – W.6.4-5

Grade 7 – W.7.4-6

Research to Build and Present Knowledge

Grade 4 – W.4.7-9b

Grade 5 – W.5.7-9b

Grade 6 – W.6.7-9

Grade 7 – W.7.7-9a

SPEAKING AND LISTENING

Comprehension and Collaboration

Grade 4 – SL.4.1-2

Grade 5 – SL.5.1-1d

Grade 6 – SL.6.1-2

Grade 7 – SL.7.1

Presentation of Knowledge and Ideas

Grade 4 – SL.4.4-6

Grade 5 – SL.5.4-5

Grade 6 – SL.6.4-5

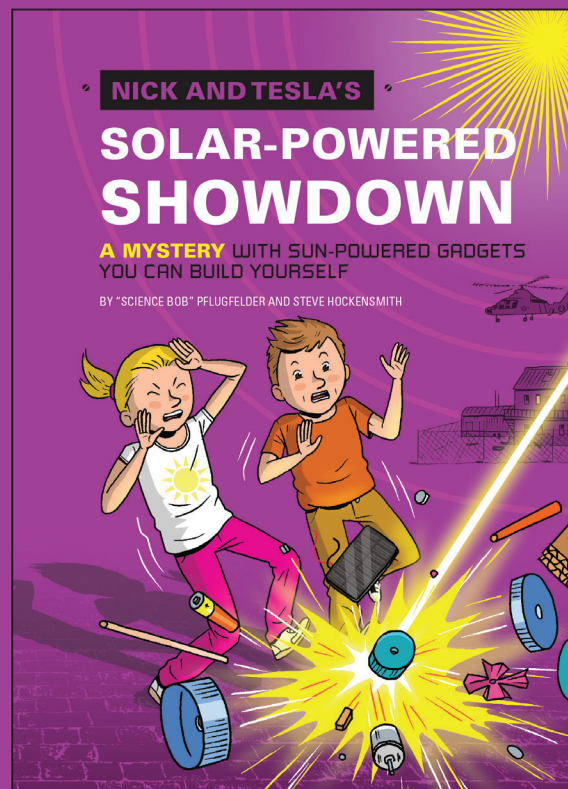
Grade 7 – SL.7.4-5



ABOUT THE BOOK

"Science lovers, mystery hounds, and fans of the series will want to follow along to the satisfying conclusion." — *School Library Journal*

Kid inventors Nick and Tesla Holt have outsmarted crooks, spies, and kidnappers. Now they have to crack their biggest mystery yet: Where the heck are their parents? To outwit the criminal mastermind who's holding their parents hostage, the twins will need all their brainpower, the help of their eccentric Uncle Newt, and an assortment of homemade solar gadgets. Will the Holt family be reunited at last? Or will a hijacked solar satellite beam down doom from the skies? The adventure includes instructions for creating a solar-powered hot-dog cooker, alarm, secret listening device, and model car, plus a nighttime signal cannon that fires illuminated Ping-Pong balls.



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ABOUT THE AUTHORS

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