

TIPS-SCIENCE**Grade 6-8 Pikesville Set****ASTRONOMY**

- S-1 Galactic Olympics
- S-2 Planetary Scavenger
- S-3 It's All Relative!
- S-4 It's a String Thing
- S-5 Outrageous Orbits
- S-6 Wide Open Spaces

DIVERSITY OF LIFE

- S-7 Classification is Key
- S-8 Bat-Man!
- S-9 You Be the Judge
- S-10 Name Game
- S-11 Picture Perfect
- S-12 That's Not Growing Back
- S-13 Refrigerator Safari
- S-14 Tricky Taxonomy

ECOLOGY

- S-15 Parts of the Ecosystem
- S-16 Climatographs
- S-17 Fresh Water
- S-18 Oil and Water
- S-19 Population Growth
- S-20 Bath or Shower

GENETICS

- S-21 How Does Heredity Affect You?
- S-22 Tall or Short Pea Plants
- S-23 Colorblindness
- S-24 "Designer" Fruits and Vegetables
- S-25 Cloning...Cloning...Cloning
- S-26 Striving for Perfection
- S-27 Same or Different...Which is Better?

GEOLOGY

- S-28 Journey Through the Earth's Layers
- S-29 The Plates Are Crashing!
- S-30 I Feel the Earth Move!
- S-31 Should We Stay or Should We Go?

- S-32 This Is the Hardest One!
- S-33 Lasting Impressions
- S-34 Frozen in Time
- S-35 It's The Law!

HUMAN SYSTEMS

- S-36 "Cell"ibration!
- S-37 Levels of Life
- S-38 Down the Hatch
- S-29 You've Got Some Nerve!
- S-40 We Got the Beat!
- S-41 Muscle Bound
- S-42 Making Connections
- S-43 What's in a Name?
- S-44 Putting the Pieces Together

MACHINES

- S-45 Levers Have Class
- S-46 Design a Bike
- S-47 Cut and Paste Circuits
- S-48 Wasted Energy
- S-49 It's About Hard Work

OCEANOGRAPHY

- S-50 Float or Sink
- S-51 "Egg"cellent Experiment
- S-52 Profile Mapping
- S-53 So You Want to Be an Oceanographer...
- S-54 Designer Fish

SKILLS AND PROCESSES

- S-55 Cylinder Challenge
- S-56 Out of Control!

SOUND AND LIGHT

- S-57 The Eyes Have It!
- S-58 Mirror Madness
- S-59 Perfect Pitch
- S-60 Somewhere Over the Rainbow
- S-61 Good Vibrations
- S-62 Ride the Wave

*Interactive Homework*

Teachers Involve Parents in Schoolwork

TIPS Activities for the Middle Grades

Over 350 prototype TIPS activities

Math
Grades 6-8

Language Arts
Grades 6-8

Science
Grades 6-8

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NOTE: See *TIPS Research—Summary of Results* and list of references in the *Manual for Teachers: Interactive Homework for the Middle Grades* (2017).

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Overview

Researchers worked with teachers to design, implement, and test the process called ***Teachers Involve Parents in Schoolwork (TIPS)***.

TIPS activities require students to talk with someone at home about something interesting that they are learning in class. TIPS solves some important problems with homework:

- TIPS helps all parents become involved, not just the few who are comfortable with school subjects.
- TIPS activities include a section for students and parents to discuss how a school skill is used in the real world.
- TIPS includes a section for home-to-school communications for parents' comments or questions.

Studies show that, overwhelmingly, parents appreciate teachers' efforts to keep them informed and involved. There are positive results for student learning, homework completion, and attitudes about homework.

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Many thanks to the teachers and curriculum leaders in districts and schools, and colleagues and students at Johns Hopkins University who assisted in the development of prototype TIPS activities for the middle grades.

See all acknowledgements in the *Manual for Teachers: Interactive Homework in the Middle Grades, 2017*.

TIPS-MATH

Grade 6

NUMBER SYSTEM

- M6-1 Math in Our World
- M6-2 Divide and Conquer
- M6-3 Divisibility Rocks
- M6-4 Prime Time
- M6-5 Here's the Low Down
- M6-6 Make a Match
- M6-7 Greatest Common Factor
- M6-8 Writing Decimals as Fractions
- M6-9 How Does It Compare?
- M6-10 Measure Up
- M6-11 There is Value in the Place
- M6-12 Line Up
- M6-13 Trading Places
- M6-14 Integer Football Game

EXPRESSIONS AND EQUATIONS

- M6-15 Which Comes First
- M6-16 Step Equations

RATIOS AND PROPORTIONS

- M6-17 Know the Ratio

GEOMETRY

- M6-18 Enter the Area of Triangles
- M6-19 Walk It Off—Find the Perimeter
- M6-20 Battle Boxes—Coordinate Grid
- M6-21 Find a Familiar Face

STATISTICS AND PROBABILITY

- M6-22 Venn There, Done That
- M6-23 A Tree Grows in Math Class
- M6-24 Growth Patterns
- M6-25 Stem and Leaf Plots
- M6-26 Tally Ho—Frequency Tables
- M6-27 MMM...Mean, Mode, Median

TIPS SCIENCE

- S7-22 The Most Widely Used Drug
- S7-23 The Excretory System—Waste Away
- S7-24 Nervous System—The Brain
- S7-25 Nervous System—Brain Power
- S7-26 Nervous System—Is It Magic?
- S7-27 Right or Left Brain Dominance?
- S7-28 You Have A Lot of Nerve(s)
- S7-29 Nervous System -- Test Your Nerves
- S7-30 Understanding Genetics—Just By Chance
- S7-31 The Endocrine System
- S7-32 What is AIDS?
- S7-33 Update: Reported Cases of AIDS
- S7-34 Review: What a System of Systems

PLANTS AND ECOLOGY

- S7-35 The Green Leaf—Food Factory of the World
- S7-36 Understanding Genetics—Tall or Short Pea Plants
- S7-37 Something Wild and Living
- S7-38 Biomes on a New Planet

Grade 8

DIVERSITY IN MATTER

- S8-1 Testing Theories – Where Does Water Come From?
- S8-2 What Really Happens?
- S8-3 Made to Measure
- S8-4 Matter, Matter Everywhere
- S8-5 On Your Mark, Get Set, Go!
- S8-6 Does it Matter?
- S8-7 The Gas Phase – Can You Pour a Gas?
- S8-8 What's in the Air?
- S9-9 Everything Floats on Something
- S8-10 How Dense is It?
- S8-11 Let's Get Physical
- S8-12 Changes, Changes, All Around
- S8-13 Kitchen Chemistry

PATTERNS IN MATTER

- S8-14 Protons, Electrons, and Neutrons
- S8-15 A is for Atom
- S8-16 Bonding Power
- S8-17 How Many Atoms?

INTERACTIONS OF MATTER

- S8-18 Solutions!
- S8-19 Solutions! Solutions!
- S8-20 A New Use for Red Cabbage
- S8-21 Half-Life
- S8-22 Going the Distance

MOTION, FORCES, AND ENERGY

- S8-23 Bowling Anyone?
- S8-24 Let It Swing
- S8-25 Who is Bernoulli? Why Is He Flying?
- S8-26 Levers
- S8-27 Simple Machines
- S8-28 Kinetic Molecular Theory
- S8-29 Measuring Up to Potential Energy

HEAT ENERGY

- S8-30 Feelin' Hot, Hot, Hot (Heat)
- S8-31 Heat Up and Cool Down
- S8-32 Hot Box

ELECTRICITY AND MAGNETISM

- S8-33 An Electric Experience
- S8-34 It's Electric
- S8-35 How Much Electricity Do You Use?

WAVES: SOUND AND LIGHT

- S8-36 Let's Make Waves
- S8-37 Pumping up the Volume
- S8-38 Sounds Good to Me
- S8-39 Am I Seeing Things?
- S8-40 You'll Need Energy to Choose a Career

TIPS-SCIENCE
Grade 6**AQUATIC LIFE AND SCIENCE**
SKILLS

- S6-1 Graphing M&M's
- S6-2 Line Graphs—Graphing Daips
- S6-3 Graphing Data—Heads or Tails?
- S6-4 Living in Water—A Mean Decision
- S6-5 Living in Water—Classifying Objects
- S6-6 Living in Water—To Market We Go
- S6-7 Living in Water—The Disappearing Act
- S6-8 Why are Some Bodies of Water so Salty?
- S6-9 Living in Water—Fresh and Salt Water Mixtures
- S6-10 Living in Water—You're in Hot Water Now
- S6-11 Living in Water—The Slimy Problem
- S6-12 Living in Water—Reading a Thermometer
- S6-13 Living in Water—Seasonal Changes
- S6-14 Living in Water—Dissolved Oxygen in Water
- S6-15 Living in Water—How Does a Body of Water Freeze?
- S6-16 Living in Water—Who, What, and Where in Water?
- S6-17 Living in Water—Breaker! Breaker!
- S6-18 The Universe—The Final Frontier

HEALTH AND EARLY
ADOLESCENT DEVELOPMENT

- H6-1 Changes in Adolescence
- H6-2 Physical and Emotional Changes in Adolescence
- H6-3 My Family
- H6-4 Who Am I? Who Do I Want to Be?
- H6-5 The Emotional You
- H6-6 I See Me, You See Me
- H6-7 All About Me
- H6-8 Feeling Good About Me

- H6-9 This is Valuable to Me
- H6-10 What Should I Do?
- H6-11 Decisions Made Easy
- H6-12 Blinding Light
- H6-13 Not Seeing is Believing
- H6-14 Seeing the Blind Person's View
- H6-15 Dizzy Ears
- H6-16 Sounds of Music
- H6-17 Food for Health
- H6-18 Deciding About Drugs
- H6-19 AIDS Awareness
- H6-20 The Human Reproductive Process

Grade 7**LIFE SKILLS AND TOPICS**

- S7-1 Alphabet Soup
- S7-2 Metric Madness!
- S7-3 Cylinder Change
- S7-4 Out of Control!
- S7-5 More Thinking with Data Displays
- S7-6 What's the Word?

BASIC CONCEPTS AND PROCESSES

- S7-7 Life Span
- S7-8 Is This Alive?
- S7-9 Being Alive
- S7-10 You Be the Judge
- S7-11 Osmosis
- S7-12 And Then There Were One Million
- S7-13 Big Business in Bacteria

ORGAN SYSTEMS AND HEALTH

- S7-14 Putting the Pieces Together
- S7-15 Circulatory System -- Feel the Beat!
- S7-16 Circulatory System -- Let's Exercise
- S7-17 Circulatory System -- Pump It Up!
- S7-18 Circulatory and Respiratory Systems: We Will Recover
- S7-19 Respiratory Systems —Take a Deep Breath
- S7-20 Digestive System: Digest This
- S7-21 The Energy Detective -- Finding Starch and Fat

TIPS-MATH
Grade 7**NUMBER SYSTEM**

- M7-1 Keep the Pattern Going
- M7-2 Follow the SIGNS
- M7-3 Modeling Integers—Keep Count
- M7-4 Picture These Fractions
- M7-5 More or Less
- M7-6 The Price is Right
- M7-7 Perfect Squares
- M7-8 Root Root Root for Square Roots

EXPRESSIONS AND EQUATIONS

- M7-9 Express Yourself
- M7-10 Greater or Less Than
- M7-11 Match the Inequalities
- M7-12 No Mystery—Solve the Equation

GEOMETRY

- M7-13 From this Area to That
- M7-14 Round and Round
- M7-15 Space in Circles
- M7-16 What's the Angle?
- M7-17 Complex Figures are Simple

RATIOS AND PROPORTIONS

- M7-18 Useful Unit Rates
- M7-19 Go Ratios
- M7-20 Measure for Measure
- M7-21 Size it Up

STATISTICS AND PROBABILITY

- M7-22 What's the Plot?
- M7-23 Circle Graphs

Grade 8**NUMBER SYSTEM**

- M8-1 Part of the Whole
- M8-2 What's your Size?
- M8-3 What's Next?
- M8-4 Weather or Not
- M8-5 It's All in the Cards
- M8-6 Jump to It
- M8-7 OOO-La-La Order of Operations

EXPRESSIONS AND EQUATIONS

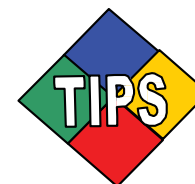
- M8-8 Express Yourself
- M8-9 Are you Square?
- M8-10 Write Algebraically—Right
- M8-11 What's the Point?
- M8-12 What's the Relationship?

GEOMETRY

- M8-13 Under Cover
- M8-14 Turn up the Volume
- M8-15 Mirror Mirror
- M8-16 Imagine That
- M8-17 Round and Round We Go
- M8-18 Figure It Out
- M8-19 Same Shapes
- M8-20 Pythagorean What?

STATISTICS AND PROBABILITY

- M8-21 Count Me In
- M8-22 Combine Forces
- M8-23 Who Goes First?
- M8-24 Box it In
- M8-25 Scatter Plots Not Scatter Brained



TIPS-LANGUAGE ARTS**Grade 6****WRITING**

- L6-1 Writing a Paragraph – A Favorite Activity
- L6-2 Parts of a Paragraph – Set it Straight
- L6-3 Creative Writing and Oral Speaking--It's News to Me
- L6-4 Rhyming Poem – Who are you?
- L6-5 Combining Sentences – Make Short Ones Long
- L6-6 Explanatory Writing – Late Night Movie
- L6-7 Explanatory Writing – A Shopping Spree
- L6-8 Explanatory Writing – Where Would You Travel?
- L6-9 Explanatory Writing – On a Desert Island
- L6-10 Narrative Writing – A Typical Day
- L6-11 Narrative Writing – What's So Funny?
- L6-12 Narrative Writing – Planning a Party
- L6-13 Narrative Poem – Keeping Time

GRAMMAR

- L6-14 Nouns and Adjectives – In the Kitchen
- L6-15 Naming Common and Proper Nouns– Are You Proper?
- L6-16 Eradicating Errors
- L6-17 Verbs – Put Them in Action
- L6-18 Verbs – Present and Past
- L6-19 Commas and Quotation Marks – Interviewing a Famous Person

WORDS AND MEANINGS

- L6-20 Multiple Meaning Words – Give It a Shot!
- L6-21 Fact or Opinion?
- L6-22 Sequential Order – Now, You're Cooking
- L6-23 Order! Order!
- L6-24 Similarities and Differences
- L6-25 Chronological Order – Memories of Me

LINKING READING AND WRITING

- L6-26 Book Jacket – A Main Event
- L6-27 Paper Bag Puppet – Creating a Story Character
- L6-28 Biographies – Frame It!
- L6-29 Adventures in Eating--Menus of Today and Yesterday
- L6-30 Shopping Mall Designer – Story Stores
- L6-31 Animal Film – Sequential Order
- L6-32 Animal Tales – Comical Character
- L6-33 Animal Tales – Art Project
- L6-34 Essay: The Best Short Story I've Read

Grade 7**WRITING**

- L7-1 Descriptive Paragraph: First Impressions
- L7-2 What a Character!
- L7-3 Descriptive Words – Styles of the Famous
- L7-4 A Special Soul
- L7-5 T.V. Tale – Telling Time
- L7-6 Hairy Tales from the Past
- L7-7 Eyewitness
- L7-8 True Story!
- L7-9 You Are There – Writing a Monolog
- L7-10 Letter Writing: Advice to a Talk Show Host
- L7-11 Talk Show Guest
- L7-12 The Thinking-Writing Connection – Making Decisions
- L7-13 Combining Sentences – Make Us One
- L7-14 Sentence Completion – Can You Say More?
- L7-15 Set a Good Example
- L7-16 Can You Do Imitations?
- L7-17 Whose Portrait on a Dollar?
- L7-18 Stick to the Facts

GRAMMAR

- L7-19 Do They Agree? Subjects and Verbs
- L7-20 Verbs – Where and When is the Action?
- L7-21 Adjectives and Adverbs – How Descriptive!
- L7-22 Parts-of-Speech Sweatshirt
- L7-23 Edit This, Editor

TIPS-LANGUAGE ARTS**WORDS AND MEANINGS**

- L7-24 Categories – What's What?
- L7-25 Order in the Kitchen – Can You Cook?
- L7-26 Fact or Opinion – Which is Which?
- L7-27 Context Clues: Being Late is a Big Mistake!
- L7-28 A Word to the Wise – Vary Very
- L7-29 Expanding Similes
- L7-30 The Homonyms Jeopardy Game
- L7-31 Predicting Outcomes – Solving Riddles

LINKING READING AND WRITING

- L7-32 Character Computer: Input and Output
- L7-33 Animals in Print – It's in the Cards
- L7-34 Be a Literary Critic--Tell It Like It Is
- L7-35 My, How Times Have Changed
- L7-36 Tell a Tall Tale
- L7-37 Don't Miss This Myth
- L7-38 "AD" it Up
- L7-39 Story Problems – What was that Story Again?
- L7-40 Story Plans – Retell Me a Story
- L7-41 Brainstorm a Story Plan
- L7-42 The Big Three – Characters, Setting, Plot
- L7-43 The Whole Story

Grade 8**WRITING**

- L8-1 Getting Off to a Good Start
- L8-2 Photo Opportunities
- L8-3 One Really L– o–n–g Sentence
- L8-4 Does it Make Any Sense?
- L8-5 Build a Better Paragraph
- L8-6 A Helping Hand
- L8-7 Think It Through
- L8-8 Looking Wa-a-ay Ahead
- L8-9 Jobs and Success
- L8-10 Coping: I Can Handle It!

- L8-11 Apples and Oranges, or Peas in a Pod
- L8-12 Writing to Persuade
- L8-13 Living on a Budget
- L8-14 Personification: Come Alive!
- L8-15 Moving in the Right Direction
- L8-16 Do You Know the Way to...?
- L8-17 Just Tell Me How
- L8-18 To Whom It May Concern
- L8-19 Radio Rap
- L8-20 Now, a Word from Our Sponsor
- L8-21 Help Wanted!
- L8-22 Hopes and Dreams
- L8-23 Enjoying Haiku

LINKING READING AND WRITING

- L8-24 Man From Mars
- L8-25 Thumbs Up! Thumbs Down!
- L8-26 Oral Book Report: A Character Mask
- L8-27 Picture This Myth

GRAMMAR

- L8-28 Verbs that Work
- L8-29 Subjects and Verbs – the Match Game
- L8-30 Painting with Words
- L8-31 Brave Pronouns
- L8-32 Be Positive About Appositives
- L8-33 Don't Quote Me

WORDS, MEANINGS, and OTHER THINGS

- L8-34 Analogies: Solve the Puzzles
- L8-35 Familiar Sayings or Old Hat?
- L8-36 Watch Out – Errors Count!
- L8-37 Decisions, Decisions, Decisions
- L8-38 Exploring Careers
- L8-39 Job Skills vs. Homework Skills