INDIANA PROJECT WET

State Science Standards Correlation to Activities

Please use the following correlations of the Project WET activities to the Indiana State Science Standards for your planning needs.

Project WET provides workshops throughout the state, and they can Be designed to meet your grade level or group needs.

Correlations will be available on line at:

projectwet.in.gov

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SEVENTH GRADE

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Project WET Activities correlated to the Indiana State Science Standards

Page	Project WET Activity
3	***Check It Out!*** Explore a variety of performance assessment strategies
7	***Idea Pools*** Become familiar with pre-assessment strategies
9	***Let's Work Together*** Use cooperative learning strategies
12	***Water Action*** Propose, analyze, and implement action strategies
19	***Water Log*** Assess student learning through a journal of portfolio
25	***Adventures in Density*** Experiment with density and explore examples of density in classic literature
30	***H_2Olympics*** Compete in a water Olympics to investigate adhesion and cohesion
35	***Hangin' Together*** Mimic hydrogen bonding in surface tension, ice formation, evaporation, ad solutions
43	**Is *There Water on Zork?*** Test the properties of water
47	***Molecule in Motion*** Simulate molecular movement in water's three states
50	***Water Match*** Match water picture cards and discover the three states of water
54	***What's the Solution*** Solve a crime while investigating the dissolving power of water
63	***Aqua Bodies*** Estimate the amount of water in a person, a cactus, or a whale
66	***Aqua Notes*** Sing to discover how the human body uses water
72	***Let's Even Things Out*** Demonstrate osmosis and diffusion
76	***Life Box (The)*** Discover the elements essential to life
79	***Life in the Fast Lane*** Explore Temporary wetlands
85	***No Bellyachers*** Show how pathogens are transmitted by water by playing a game of tag
89	***People of the Bog*** Construct a classroom bog
93	***Poison Pump*** Solve a mystery about a waterborne disease
99	***Salt Marsh Players*** Role-play organisms adapted to life in a salt marsh
107	***Super Sleuths*** Search for others who share similar symptoms of a waterborne disease
116	***Thirsty Plants*** Demonstrate transpiration and conduct a field study
122	***Water Address*** Analyze clues to match organisms with water-related adaptations
129	***Branching Out!*** Construct a watershed model
133	***Capture, Store, and Release*** Use a household sponge to demonstrate how wetlands get wet and how they contribute to a watershed
136	***Get the Ground Water Picture*** Create an "earth window" to investigate ground water systems
144	***Geyser Guts*** Demonstrate the workings of a geyser
150	***Great Stony book (The)*** Create layers of buried fossils and read a great stony book
155	***House of Seasons (A)*** Create a collage that peeks through a "window" to reveal the role of water in each season
157	***Imagine!*** Imagine a water molecule on its water journey
161	***Incredible Journey (The)*** Simulate the movement of water through Earth's systems
166	**Just Passing Through** Mimic the movement of water down a slope

Page	Project WET Activity
171	***Old Water*** Create a mural that relates events to the age of Earth, water, and life
174	***Piece It Together*** Explore global climates and their influence on lifestyles
182	***Poetic Precipitation*** Simulate cloud formation and express feelings toward precipitation through poetry
186	***Rainy -Day Hike*** Explore schoolyard topography and its effect on the watershed
191	***Stream Sense*** Develop sensory awareness of a stream
196	***Thunderstorm (The)*** Simulate the sounds of thunderstorm and create precipitation maps
201	***Water Models*** Construct models of the water cycle and adapt them for different biomes
206	***Wet Vacation*** Plot data to determine weather patterns and design appealing travel brochures
212	***Wetland Soils in Living Color*** Classify soil types using a simple color key
219	***A-maze-ing Water*** Negotiate a maze to investigate nonpoint source pollution
223	***Color Me a Watershed*** Interpret maps to analyze changes in a watershed
232	***Common Water*** Demonstrate that water is a shared resource
238	***Drop in the Bucket (A)*** Calculate the availability of fresh water on Earth
242	***Energetic Water*** Design devices to make water do work
246	***Great Water Journeys*** Use clues to track great water journey of plants, people, and other animals on a map
254	***Irrigation Interpretation*** Model different irrigation systems
260	***Long Haul (The)*** Haul water to appreciate the amount of water used daily
262	***Nature Rules!*** Write news stories based on natural, water-related disasters
267	***Sum of the Parts*** Demonstrate nonpoint source pollution
271	***Water Meter*** Construct a water meter and keep track of personal water use
274	***Water Works*** Create a web of water users
279	***Where Are the Frogs*** Run a simulation and experiment to understand the effects of acid rain
289	***AfterMath*** Assess economic effects of water-related disasters
293	**Back to the Future** Analyze streamflow data to predict floods and water shortages
300	***CEO (The)*** Become a Chief executive Officer (CEO) and learn about business/corporate water management challenges
303	***Dust Bowls and Failed Levees*** Witness, through literature, the effects of drought and flood on human populations
307	***Every Drop Counts*** Identify and implement water conservation habits
311	***Grave Mistake (A)*** Analyze data to solve a ground water mystery
316	***Humpty Dumpty*** Simulate a restoration project by putting the pieces of an ecosystem back together
322	***Macroinvertebrate Mayhem*** Illustrate, through a game of tag, how macroinvertebrate populations indicate water quality
328	***Money Down the Drain*** Observe and calculate water waste from a dripping faucet
333	***Price is Right (The)*** Analyze costs for building a water development project
338	***Pucker Effect (The)*** Simulate ground water testing to discover the source of contamination
344	***Reaching Your Limits*** "Limbo" to learn basic water quality concepts and standards development
348	***Sparkling Water*** Develop strategies to clean wastewater

Page	Project WET Activity
353	***Super Bowl Surge*** Develop a strategy to accommodate the demands on a wastewater treatment plant
360	***Wet-Work Shuffle*** Sequence the water careers involved in getting water to and from the home
367	***Choices and Preferences, Water Index*** Develop a “water index” to rank water uses
373	***Cold Cash in the Icebox*** Create a mini-insulator to prevent an ice cube from melting
377	***Dilemma Derby*** Examine differing values in resolving water resource management dilemmas
382	***Easy Street*** Compare quantities of water used in the late 1800s to the present
388	***Hot Water*** Debate water issues
392	***Pass the Jug*** Simulate water rights policies with a "jug" of water
397	***Perspectives*** Identify values to solve water management issues
400	***Water: Read All About It!*** Develop a Special Edition on water
403	***Water Bill of Rights*** Create a document to guarantee the right to clean and sustainable water resources
407	***Water Concentration*** Play concentration and discover how water use practices evolve
413	***Water Court*** Participate in a mock court to settle water quality and quantity disputes
421	***Water Crossings*** Simulate a water crossing and relate the historical significance of waterways
425	***What's Happening?*** Conduct a community water use survey
429	***Whose Problem Is It?*** Analyze the scope and duration of water issues to determine personal and global significance
435	***Raining Cats and Dogs*** Discover how water proverbs vary among culture and climates
442	***Rainstick (The)*** Build an instrument that imitates the sound of rain
446	***Water Celebration*** Organize a water celebration with activities from this guide
450	***wAteR in motion*** Create artwork that simulates the movement and sound of water in nature
454	***Water Message in Stone*** Replicate ancient rock art, creating symbols of water
457	***Water Write*** Explore feelings about and perception of water topics through writing exercises
460	***Wish Book*** Compare recreational uses of water in the late 1800s and the present

Seventh Grade

	The Nature of Science and Technology	Scientific Thinking	The Physical Setting	The Living Environment	The Mathematical World	Common Themes
ACTIVITY						
Adventures in Density (25)			7.3.13			
A-maze-ing Water (219)	7.1.7 7.1.8, 7.1.9			7.4.10 7.4.14		
Back to the Future (293)	7.1.7	7.2.5 7.2.7				
Branching Out! (129)						7.7.1, 7.7.2 7.7.3
Common Water (232)	7.1.8			7.4.10		
Easy Street (382)	7.1.8 7.1.9					
Energetic Water (242)	7.1.7		7.3.16			
Get the Ground Water (136)	7.1.3	7.2.7			7.5.4	
A Grave Mistake (311)	7.1.2 7.1.4 7.1.8			7.4.14		
H2O Olympics (30)			7.3.13			
Hangin' Together (35)			7.3.13			
Humpty Dumpty (316)	7.1.8					
Imagine! (157)						7.7.3
The Incredible Journey (161)		7.2.5				7.7.1
Irrigation Interpretation (254)	7.1.4 7.1.8 7.1.9			7.4.10		
Just Passing Through (166)						7.7.1
Let's Even Things Out (72)			7.3.13			7.7.1 7.7.3
The Long Haul (260)	7.1.8 7.1.9			7.4.10		
Nature Rules! (262)	7.1.4					
No Bellyachers (85)	7.1.9			7.4.10		

	The Nature of Science and Technology	Scientific Thinking	The Physical Setting	The Living Environment	The Mathematical World	Common Themes
ACTIVITY						
People of the Bog (89)			7.3.13			7.7.3
Perspectives (397)	7.1.4 7.1.8	7.2.7				
Poetic Precipitation (182)						7.7.3
Poison Pump (93)	7.1.1, 7.1.2 7.1.4, 7.1.9			7.4.10 7.4.14		
The Pucker Effect (338)	7.1.4	7.2.7	7.3.13	7.4.10 7.4.14	7.5.4	
Rainy-Day Hike (186)		7.2.7		7.4.14		7.7.1
Reaching Your Limits (344)				7.4.10 7.4.14		7.7.4
Sparkling Water (348)	7.1.7		7.3.13	7.4.10 7.4.14		
Sum of the Parts (267)				7.4.14		
Super Bowl Surge (353)	7.1.7 7.1.9			7.4.10 7.4.14		
Super Sleuths (107)	7.1.4 7.1.9			7.4.10 7.4.14		
Water Concentration (407)	7.1.7 7.1.8 7.1.9		7.3.16	7.4.10		
Water Models (201)			7.3.5			7.7.1
Water Works (274)	7.1.8 7.1.9			7.4.10		
Wet Vacation (206)			7.3.5			
Wet-Work Shuffle (360)	7.1.7 7.1.9					
Wetland Soils (212)		7.2.7			7.5.4	
What's the Solution? (54)	7.1.1		7.3.13			
Where Are the Frogs? (279)			7.3.13			

Grade 7

Standard 1

The Nature of Science and Technology

Students further their scientific understanding of the natural world through investigations, experiences, and readings. They design solutions to practical problems by using a variety of scientific methodologies.

The Scientific View of the World

7.1.1 Recognize and explain that when similar investigations give different results, the scientific challenge is to judge whether the differences are trivial or significant, which often takes further studies to decide.

WET Activities (page): 93

Scientific Inquiry

7.1.2 Explain that what people expect to observe often affects what they actually do observe and provide an example of a solution to this problem.

WET Activities (page): 93, 311

7.1.3 Explain why it is important in science to keep honest, clear, and accurate records.

WET Activities (page): 136

7.1.4 Describe that different explanations can be given for the same evidence, and it is not always possible to tell which one is correct without further inquiry.

WET Activities (page): 93, 107, 254, 262, 311, 338, 397

Technology and Science

7.1.7 Explain how engineers, architects, and others who engage in design and technology use scientific knowledge to solve practical problems.

WET Activities (page): 219, 242, 293, 348, 353, 360, 407

7.1.8 Explain that technologies often have drawbacks as well as benefits. Consider a technology, such as the use of pesticides, which help some organisms but may hurt others, either deliberately or inadvertently.

WET Activities (page): 219, 232, 254, 260, 274, 311, 316, 382, 397, 407

7.1.9 Explain how societies influence what types of technology are developed and used in fields such as agriculture, manufacturing, sanitation, medicine, warfare, transportation, information processing, and communication.

WET Activities (page): 85, 93, 107, 219, 254, 260, 274, 353, 360, 382, 392, 407

Standard 2

Scientific Thinking

Students use instruments and tools to measure, calculate, and organize data. They frame arguments in quantitative terms when possible. They question claims and understand that findings may be interpreted in more than one acceptable way.

Computation and Estimation

7.2.5 Estimate probabilities of outcomes in familiar situations, on the basis of history or the number of possible outcomes.

*area: a measure of the size of a two-dimensional region

*volume: a measure of the size of a three-dimensional object

*significant figures: digits that appropriately express the precision of a measurement or quantity derived mathematically from one or more measurements

WET Activities (page): 161, 293

Communication Skills

7.2.7 Incorporate circle charts, bar and line graphs, diagrams, scatter plots*, and symbols into writing, such as lab or research reports, to serve as evidence for claims and/or conclusions.

*scatter plot: a coordinate graph showing ordered pairs of data

WET Activities (page): 136, 186, 212, 293, 338, 397

Standard 3

The Physical Setting

Students collect and organize data to identify relationships between physical objects, events, and processes. They use logical reasoning to question their own ideas as new information challenges their conceptions of the natural world.

7.3.5 Recognize and explain that heat energy carried by ocean currents has a strong influence on climate around the world.

WET Activities (page): 174, 201, 206

Matter* and Energy*

7.3.13 Explain that many substances dissolve in water. Understand that the presence of these substances often affects the rates of reactions that are occurring in the water as compared to the same reactions occurring in the water in the absence of the substances.

WET Activities (page): 25, 30, 35, 72, 89, 338, 348

7.3.16 Recognize and explain that different ways of obtaining, transforming, and distributing energy have different environmental consequences.

matter: anything that has mass and takes up space

*mass: the amount of matter in an object

energy: what is needed to do work

work: a force acting over a distance to move an object

force: a push or a pull that can cause a change in the motion of an object

*motion: a change in position of an object in a certain amount of time

wavelength: the distance between two consecutive, similar points on a wave

*wave: traveling disturbance that carries energy from one place to another

*infrared radiation: electromagnetic radiation having wavelengths longer those of red light but shorter than microwaves

*ultraviolet radiation: electromagnetic radiation having wavelengths shorter than those of visible light but longer than those of x-rays

*temperature: a measure of average heat energy that can be measured with a thermometer

*acidity: a measure of the hydrogen ion concentration in a chemical system

WET Activities (page): 242, 407

Standard 4

The Living Environment

Students begin to trace the flow of matter and energy through ecosystems. They recognize the fundamental difference between plants and animals and understand its basis at the cellular level. Students distinguish species, particularly through an examination of internal structures and functions. They use microscopes to observe cells and recognize that cells function in similar ways in all organisms.

Human Identity

7.4.10 Describe how technologies having to do with food production, sanitation, and disease prevention have dramatically changed how people live and work and have resulted in changes in factors that affect the growth of human population.

WET Activities (page): 85, 93, 107, 219, 232, 254, 260, 274, 338, 344, 348, 353, 407

7.4.14 Explain that the environment may contain dangerous levels of substances that are harmful to human beings. Understand, therefore, that the good health of individuals requires monitoring the soil, air, and water as well as taking steps to keep them safe.

WET Activities (page): 93, 107, 186, 219, 267, 311, 338, 344, 348, 353

Standard 5

The Mathematical World

Students apply mathematics in scientific contexts. They use mathematical ideas, such as relations between operations, symbols, statistical relationships, and the use of logical reasoning, in the representation and synthesis of data.

Reasoning and Uncertainty

7.5.4 Describe that the larger the sample, the more accurately it represents the whole. Understand, however, that any sample can be poorly chosen and this will make it unrepresentative of the whole.

WET Activities (page): 136, 212, 338

Standard 6

Historical Perspectives

Students gain understanding of how the scientific enterprise operates through examples of historical events. Through the study of these events, they understand that new ideas are limited by the context in which they are conceived, are often rejected by the scientific establishment, sometimes spring from unexpected findings, and grow or transform slowly through the contributions of many different investigators.

7.6.1 Understand and explain that throughout history, people have created explanations for disease. Note that some held that disease had spiritual causes, but that the most persistent biological theory over the centuries was that illness resulted from an imbalance in the body fluids. Realize that the introduction of germ theory by Louis Pasteur and others in the 19th century led to the modern understanding of how many diseases are caused by microorganisms, such as bacteria, viruses, yeasts, and parasites.

WET Activities (page): 93

Standard 7

Common Themes

Students analyze the relationships within systems. They investigate how different models can represent the same data, rates of change, cyclic changes, and changes that counterbalance one another.

Systems

7.7.1 Explain that the output from one part of a system, which can include material, energy, or information, can become the input to other parts and this feedback can serve to control what goes on in the system as a whole.

WET Activities (page): 72, 129, 161, 166,186, 201

Models and Scale

7.7.2 Use different models to represent the same thing, noting that the kind of model and its complexity should depend on its purpose.

WET Activities (page): 129

Constancy and Change

7.7.3 Describe how physical and biological systems tend to change until they reach equilibrium and remain that way unless their surroundings change.

WET Activities (page): 72, 89, 129, 157, 182

7.7.4 Use symbolic equations to show how the quantity of something changes over time or in response to changes in other quantities.