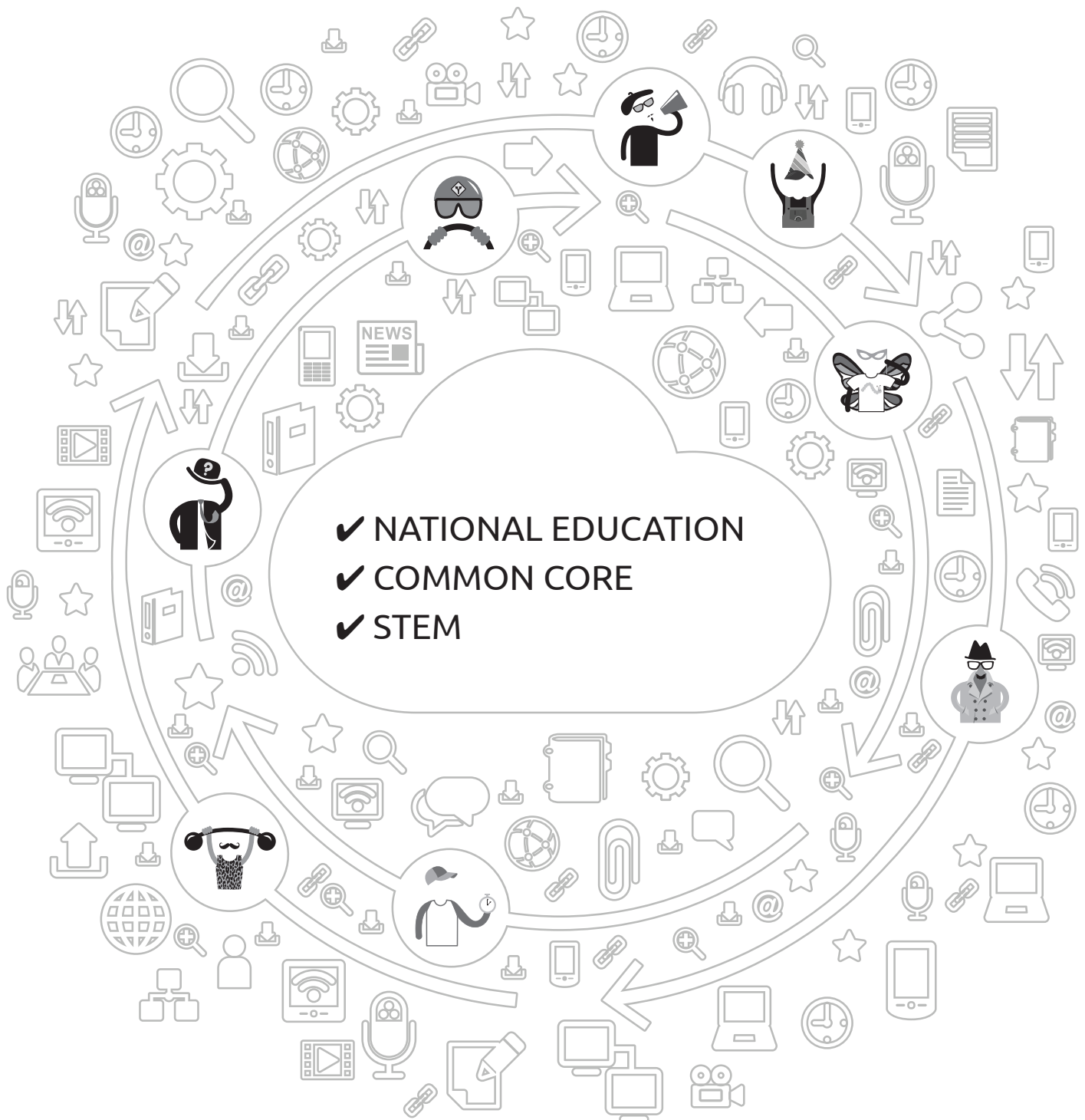


# CONNECTING THE STANDARDS



### **Connecting the Standards**

Destination Imagination, Inc.  
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Destination Imagination motivates young people to look for the challenges in life and see them as opportunities for growth. We inspire them to solve problems, search for creative solutions and work cooperatively with others.

Each year we connect our Challenges to the educational learning standards. This guide shows how each of the learning standards is addressed in our Challenges.

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# 1

## PROGRAM OVERVIEW

### OUR VISION

To be the global leader in teaching the creative process on the journey from imagination to application.

### OUR MISSION

To develop opportunities that inspire the global community of learners to utilize diverse approaches in applying 21st Century Skills and creativity.

The Destination Imagination program encourages teams of learners to have fun, take risks, focus, and frame challenges while incorporating STEM (science, technology, engineering, and mathematics), the arts, and service learning. Our participants learn patience, flexibility, persistence, ethics, respect for others and their ideas, and the collaborative problem solving process. Teams may showcase their solutions at a tournament.

### A SUMMARY OF THE CREATIVE PROCESS

Our goal at Destination Imagination (DI) through our Challenges is to give students the chance to learn and experience the creative process. For those of you who are new to DI, the creative process is about thinking and doing in no prescribed order. Some people “do” first and then think about what they have done, while others think first and then initiate action. Creativity and the creative process have been the debate of many empirical researchers over the last seven decades, and at DI we do not try to define the terms but rather we give our student participants the chance to work within the components. The following are the components of the creative process that we strive to have our DIPers experience:

#### **Becoming aware of a challenge, problem, or opportunity**

- Using your imagination to explore new ideas about solutions

#### **Applying thinking skills to develop options**

- Divergent and convergent thinking
- Using creativity and critical thinking tools to help with generating ideas and focusing to find the best ones
- Being positive and listening to all ideas before judging them
- Intuitive insight and novelty
- Ability to work within or outside of structure

#### **Initiating behavior and committing to an option**

- Willingness to take risks; go beyond the minimum
- Controlling behavior to manage impulsiveness

#### **Using social intelligence**

- Collaboration; understand and use different problem-solving styles

#### **Achieving the best solution**

- Assessing the project while it is being done and after it is finished
- Sometimes requires starting over or admitting failure

#### **Evaluating results**

- Reflecting on the experience, resources, and team dynamics



## GOALS

### What do we hope to accomplish with this Guide?

- To understand how the Challenges meet the National Educational Standards and how they connect to 21st century skills.
- To note which specific standards are addressed in each particular Challenge.
- To examine each Challenge with the focus on the learning environment.
- To realize that teams use the Life Work Standards, Thinking and Reasoning Standards, Behavioral Standards, Self Regulating Standards and Working with Others Standards as they work on Challenge solutions.
- To inform students and educators of the creative process.



## METHODS

### What methods were used to connect the Standards and the Challenges?

- Educators and subject matter experts:
  - Listed the McRel Standards for each individual curricular area.
  - Examined each standard and decided if it was addressed in every particular Challenge.
  - Designated the connections with an X on the individual charts.



## ASSESSMENTS

### How will we assess our successes?

- By discussing the connection of the Challenges and the standards with team members, Team Managers and other interested parties
- By asking team members which standards are being addressed by the various Challenges.
- Authentic Assessment - By observing if the team members display the Life Work Standards, Thinking and Reasoning Standards, Behavioral Studies Standards, Self Regulating Standards and Working with Others Standards as they work with other team members.
- Challenge solutions that are taken to tournaments are assessed and scored by appraisers based on the team's ability to meet the Challenge requirements.
- Instant Challenges require teams to engage in quick critical thinking. The team's solutions are assessed based on teamwork, creativity and the ability to meet the Challenge requirements.

# 2

## OVERVIEW OF THE CHALLENGES



### CHALLENGE A

#### Educational Focus

Engineering, Technical Design, Strategic Planning, Decision Making and Logistics, Project Management, Time and Budget Management, Teamwork

#### STEM Attributes

- Use of the engineering design process
- Exploration of physical concepts of motion and energy
- Use of mathematical concepts of geometry and measurement
- Understanding of customary and/or metric measurements
- Investigate physical concepts of motion and energy
- Consider mathematical concept of probability

#### Points of Interest

- Present a team-created story about the dangers faced by vehicles, told from the point of view of one or more vehicles
- Design and build small vehicles that are able to reliably and accurately travel specific distances
- Use at least three different power sources for the vehicles



### CHALLENGE B

#### Educational Focus

Wind Energy, Science, Technology, Storytelling, Theater Skills, Art, Time and Budget Management, Teamwork

#### STEM Attributes

- Research the scientific concept of wind energy
- Use wind energy to start motion
- Demonstrate the collection and conversion of wind energy into usable energy

#### Points of Interest

- Explore how the science of wind energy can be used to make kinetic art move
- Design and create kinetic art that moves during the presentation
- Create and present an original story that features an invisible visitor
- Integrate wind energy research into the story



### CHALLENGE C

#### Educational Focus

Storytelling, Theater Arts, Fine Arts, Costume Design, and Non-Verbal Theatrical Techniques, Teamwork

#### STEM Attributes

- Use various forms of technology to produce a solution
- Use principles of geometry in design and construction of team-created masks
- Use of technology and technical methods to cause a mask to morph

#### Points of Interest

- Present a team-created story about a character that uses a disguise
- Use only non-verbal theatrical techniques to present the story
- Design and construct at least two masks that enhance the story



### CHALLENGE D

#### Educational Focus

Research, Story Development, Improvisational Acting, Teamwork, Presentation Skills and Techniques, Teamwork, Leadership

#### STEM Attributes

- Use mathematical concept of probability when improvisational elements are selected

#### Points of Interest

- Create a 5-minute improvisational skit about life after a dramatic change and how the characters adapt to this change
- Learn about different communication techniques and integrate one into the skit
- Use only white t-shirts, washable markers and team members to create all costumes, sets and props
- Create a slogan from three randomly selected nouns



## CHALLENGE E

### Educational Focus

Research, Architectural Design, Structural Engineering, Construction, Material Science, Innovation and Design Process, Mathematics, Theater Arts, Teamwork, Time and Budget Management, Teamwork, Quantitative Reasoning

### STEM Attributes

- Use of the engineering design process to design and construct a structure
- Study the properties of a variety of materials in order to design and construct a structure
- Knowledge of whole number computation and ratios to determine raw scores earned for weight placement

### Points of Interest

- Build a structure made entirely of glue and materials the team chooses from a list.
- Test the structure by placing weights on it, and by subjecting it to torque-inducing impacts
- Produce a “bill of materials” listing the materials used in your structure, and provide samples of these materials
- Produce a prop or costume made of all the materials used in the structure
- Tell a story about something or someone that causes an unexpected twist or surprising change



## PROJECT OUTREACH

### Educational Focus

Service Learning, Partnerships, Documentation, Movie Production, and Teamwork

### STEM Attributes

- Use technology to produce photographs and recordings
- Use technology to produce a movie that outlines the team’s Service Learning Project

### Points of Interest

- Use collaborative problem solving tools to identify and select at least one real community need.
- Design and carry out a project to address the real community need
- Create a movie that documents the project
- Evaluate the project and prepare a thorough project review
- Prepare for a live press conference



## RISING STARS!

### Educational Focus

Colors, Research, Storytelling, Performing in front of an Audience, Team Problem Solving, Creativity, Collaboration and Communications

### STEM Attributes

- Use of technology to produce a solution
- Understanding of customary and/or metric measurements to produce a solution
- Investigate physical concepts of light and color

### Points of Interest

- Learn about the seven colors of the rainbow: red, orange, yellow, green, blue, indigo and violet
- Create a play about Roy G. Biv’s birthday party
- Dress Roy G. Biv in all the colors of the rainbow, and dress the guests in their favorite colors
- Have each guest bring a gift that is made mostly of the color they are wearing

## LIFE WORK STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Makes Effective Use of Tools	X	X	X	X	X	X	X	
2. Uses various information sources, including those of a technical nature, to accomplish specific tasks	X	X	X	X	X	X	X	
3. Manages money	X	X	X	X	X	X	X	
4. Pursues specific jobs	X	X	X	X	X	X	X	
5. Makes general preparation for entering the work force	X	X	X	X	X	X	X	X
6. Makes effective use of basic life skills	X	X	X	X	X	X	X	X
7. Displays reliability and a basic work ethic	X	X	X	X	X	X	X	X
8. Operates effectively within organizations	X	X	X	X	X	X	X	X

## THINKING AND REASONING STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Understands and applies the basic principles of presenting an argument	X	X	X	X	X		X	X
2. Understands and applies basic principles of logic and reasoning	X	X	X	X	X	X	X	X
3. Effectively uses mental processes that are based on identifying similarities and differences								
4. Understands and applies basic principles of hypothesis testing and scientific inquiry	X	X			X	X		X
5. Applies basic trouble-shooting and problem-solving techniques	X	X	X	X	X	X	X	X
6. Applies decision-making techniques	X	X	X	X	X	X	X	X



## WORKING WITH OTHERS STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISING STARS: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Contributes to the overall effort of a group	X	X	X	X	X	X	X	X
2. Uses conflict-resolution techniques	X	X	X	X	X	X	X	X
3. Works well with diverse individuals and in diverse situations	X	X	X	X	X	X	X	X
4. Displays effective interpersonal communication skills	X	X	X	X	X	X	X	X
5. Demonstrates leadership skill	X	X	X	X	X	X	X	X

## WRITING STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISING STARS: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Uses the general skills and strategies of the writing process	X	X	X		X	X	X	
2. Uses the stylistic and rhetorical aspects of writing	X	X	X		X		X	
3. Uses grammatical and mechanical conventions in written compositions	X	X	X		X		X	
4. Gathers and uses information for research purposes	X	X	X	X	X	X	X	

## READING STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISING STARS: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Uses the general skills and strategies of the reading process	X	X	X	X	X	X	X	X
2. Uses reading skills and strategies to understand and interpret a variety of informational texts	X	X	X	X	X		X	

## LISTENING AND SPEAKING STANDARDS\*

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALTEE	E: TWIST-O-RAMA	RISING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Uses listening and speaking strategies for different purposes	X	X	X	X	X	X	X	X

\*All of the Challenges, including Instant Challenge, involve a high degree of listening and speaking. These are primary components for each and every Challenge.

## VIEWING STANDARDS MEDIA STANDARDS\*

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALTEE	E: TWIST-O-RAMA	RISING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Uses viewing skills and strategies to understand and interpret visual media							X	
2. Understands the characteristics and components of the media							X	

\*Team members might address these two standards as part of their solution in each Challenge, but they are not integral Challenge expectations.

## MATHEMATICS STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALTEE	E: TWIST-O-RAMA	RISING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Uses a variety of strategies in the problem-solving process	X	X	X	X	X	X	X	X
2. Understands and applies basic and advanced properties of the concepts of numbers	X				X			
3. Uses basic and advanced procedures while performing the processes of computation	X				X			
4. Understands and applies basic and advanced properties of the concepts of measurement	X	X	X		X			X
5. Understands and applies basic and advanced properties of the concepts of geometry	X	X	X		X			X
6. Understands and applies basic and advanced concepts of statistics and data analysis	X				X			
7. Understands and applies basic and advanced concepts of probability	X			X	X			
8. Understands the general nature and uses of mathematics								
9. Understands and applies basic and advanced properties of functions and algebra	X		X		X			X

# GEOGRAPHY STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISING STARS: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Understands the characteristics and uses of map, globes, and other geographic tools and technologies								
2. Knows the location of places, geographic features, and patterns of the environment								
3. Understands the characteristics and uses of spatial organization of Earth's surface								
4. Understands the physical and human characteristics of place								
5. Understands the concept of regions								
6. Understands that culture and experience influence people's perceptions of places and regions								
7. Knows the physical processes that shape patterns on Earth's surface		X						
8. Understands the characteristics of ecosystems on Earth's surface								
9. Understands the nature, distribution and migration of human populations on Earth's surface								
10. Understands the nature and complexity of Earth's cultural mosaics								
11. Understands the patterns and networks of economic interdependence on Earth's surface								
12. Understands the patterns of human settlement and their causes				X				
13. Understands the forces of cooperation and conflict that shape the divisions of Earth's surface								
14. Understands how human actions modify the physical environment			X					
15. Understands how physical systems affect human systems								
16. Understands the changes that occur in the meaning, use, distribution and importance of resources							X	
17. Understands how geography is used to interpret the past								
18. Understands global development and environmental issues								

## HISTORY STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALTEE	E: TWIST-O-RAMA	RISEING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Understands family life now and in the past, and family life in various places long ago								
2. Understands the history of a local community and how communities in North America varied long ago								
3. Understands the people, events, problems, and ideas that were significant in creating the history of their state								
4. Understands how democratic values came to be, and how they have been exemplified by people, events, and symbols								
5. Understands the causes and nature of movements of large groups of people into and within the United States, now and long ago								
6. Understands the folklore and other cultural contributions from various regions of the United States and how they helped to form a national heritage								
7. Understands selected attributes and historical developments of societies in Africa, the Americas, Asia, and Europe								
8. Understands major discoveries in science and technology, some of their social and economic effects, and major scientists and inventors responsible for them	X	X		X	X	X	X	X

## SCIENCE STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALTEE	E: TWIST-O-RAMA	RISEING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Understands atmospheric processes and the water cycle								
2. Understands Earth's composition and structure								
3. Understands the composition and structure of the universe and the Earth's place in it								
4. Understands the principles of heredity and related concepts								
5. Understands the structure and function of cells and organisms								
6. Understands relationships among organisms and their physical environment								
7. Understands biological evolution and the diversity of life								
8. Understands the structure and properties of matter					X			X
9. Understands the sources and properties of energy	X	X			X			X
10. Understands forces and motion	X	X			X			X
11. Understands the nature of scientific knowledge	X	X	X		X			X
12. Understands the nature of scientific inquiry	X	X	X		X			X
13. Understands the scientific enterprise	X	X			X			X

## HEALTH STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALTEE	E: TWIST-O-RAMA	RISEING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Knows the availability and effective use of health services, products, and information								
2. Knows environmental and external factors that affect individual and community health								
3. Understands the relationship of family health to individual health								
4. Knows how to maintain mental and emotional health	X	X	X	X	X	X	X	
5. Knows essential concepts and practices concerning injury prevention and safety	X	X	X	X	X	X	X	
6. Understands essential concepts about nutrition and diet								
7. Knows how to maintain and promote personal health	X	X	X	X	X	X	X	
8. Knows essential concepts about the prevention and control of disease								
9. Understands aspects of substance use and abuse								
10. Understands the fundamental concepts of growth and development								

## THEATRE STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALTEE	E: TWIST-O-RAMA	RISEING STARS!: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Demonstrates competence in writing scripts	X	X	X		X	X	X	X
2. Uses acting skills	X	X	X	X	X	X	X	X
3. Designs and produces informal and formal productions	X	X	X	X	X	X	X	X
4. Directs scenes and productions	X	X	X	X	X	X	X	X
5. Understands how informal and formal theatre, film, television, and electronic media productions create and communicate meaning	X	X	X	X	X		X	
6. Understands the context in which theatre, film, television, and electronic media are performed today as well as in the past	X	X	X	X	X		X	

## MUSIC STANDARDS

1. Sings, alone and with others, a varied repertoire of music
2. Performs on instruments, alone and with others, a varied repertoire of music
3. Improvises melodies, variations, and accompaniments
4. Composes and arranges music within specified guidelines
5. Reads and notates music
6. Knows and applies appropriate criteria to music and music performances
7. Understands the relationship between music and history and culture

All of these Music Standards could be addressed by all Team Challenges as team members create their *Team Choice Elements*. In addition to the requirements of each Team Challenge, the team must present two creations called *Team Choice Elements* that demonstrate their interests, skills, areas of strength, and talents. The team may create anything they wish for *Team Choice Elements* including props, music, technical gadgets, costumes, and physical actions.

Each *Team Choice Element* will be evaluated in three ways: for creativity and originality; for the quality, workmanship, and/or effort that is evident; and for integration into the team's Presentation.

The area of music is one subject that is often selected in the *Team Choice Element* category. Many team members choose to play instruments, write original music, sing, or have music as an important part in their performances.

Standards #1, #3, #6, and #7 could be addressed in Instant Challenge. Often teams add a song to a Performance-based Challenge to elaborate upon their solution. Creating an original song in an Instant Challenge also adds to a creative solution.

To help teams learn more about their Specialties, they can fill out a *Team Choice Element Specialties Inventory*. This form is found in the *Roadmap*. This Inventory tells the team members what their specialties are and lists the eight areas of Specialties.

## DANCE STANDARDS

1. Identifies and demonstrates movement elements and skills in performing dance
2. Understands choreographic principles, processes, and structures
3. Understands dance as a way to create and communicate meaning
4. Applies critical and creative thinking skills in dance
5. Understands dance in various cultures and historical periods
6. Understands connections between dance and healthful living

Many of these Dance Standards could be addressed by all team members as they create their *Team Choice Elements*. In addition to the requirements of each Team Challenge, the team must present two creations called *Team Choice Elements* that demonstrate their interests, skills, areas of strength, and talents. The team may create anything they wish for *Team Choice Elements* including props, music, technical gadgets, costumes, and physical actions.

Each *Team Choice Element* will be evaluated in three ways: for creativity and originality; for the quality, workmanship, and/or effort that is evident; and for integration into the team's Presentation.

The area of dance is one subject that is often selected in the *Team Choice Element* category. Many team members choose to dance or choreograph an original dance as an important part in their performance.

Standards #1 and #3 could be addressed in Instant Challenge. Teams could add a short dance routine or illustrate their solution through dance.

## VISUAL ARTS STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISEING STARS! ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Understands and applies media, techniques, and processes related to the visual arts	X	X	X		X	X	X	X
2. Knows how to use structures (e.g., sensory qualities, organizational principles, expressive features) and functions of art	X	X	X		X	X	X	X
3. Knows a range of subject matter, symbols, and potential ideas in the visual arts		X						
4. Understands the visual arts in relation to history and cultures			X					
5. Understands the characteristics and merits of one's own artwork and the artwork of others	X	X	X	X	X	X	X	X

## PHYSICAL EDUCATION STANDARDS

1. Uses a variety of basic and advanced movement forms
2. Uses movement concepts and principles in the development of motor skills
3. Understands the benefits and costs associated with participation in physical activity
4. Understands how to monitor and maintain a health-enhancing level of physical fitness
5. Understands the social and personal responsibility associated with participation in physical activity

While Physical Education Standards are not specifically addressed in our Challenges, teams could select some physical activities for their *Team Choice Elements*. In addition to the requirements of each Team Challenge, the team must present two creations called *Team Choice Elements* that show off their interests, skills, areas of strength, and talents. The team may create anything they wish for *Team Choice Elements* including props, music, technical gadgets, costumes, and physical actions.

Each *Team Choice Element* will be evaluated in three ways: for creativity and originality; for the quality, workmanship, and/or effort that is evident; and for integration into the team's Presentation.

The area of physical activity is one subject that could be selected in the *Team Choice Element* category. Team members could incorporate gymnastics, or physical activity as an important part in their performance.

Standard #2 is observed by the Team Manager/Adult Leader. While team members are building, designing, writing, creating, painting and constructing, the Team Managers/Adult Leaders are monitoring the progress and abilities of their team members.

## BEHAVIORAL STUDIES STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISING STARS: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Understands that group and cultural influences contribute to human development, identity, and behavior	X	X	X	X	X	X	X	X
2. Understands various meanings of social group, general implications of group membership, and different ways that groups function	X	X	X	X	X	X	X	X
3. Understands that interactions among learning, inheritance, and physical development affect human behavior	X	X	X	X	X	X	X	X

## SELF REGULATING STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISING STARS: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Sets and manages goals	X	X	X	X	X	X	X	X
2. Performs self-appraisal	X	X	X	X	X	X	X	X
3. Considers risks	X	X	X	X	X	X	X	X
4. Demonstrates perseverance	X	X	X	X	X	X	X	X
5. Maintains a healthy self-concept	X	X	X	X	X	X	X	X



## TECHNOLOGY STANDARDS

	A: IN THE ZONE	B: WIND VISIBLE	C: IN DISGUISE	D: CHANGE IN REALITEE	E: TWIST-O-RAMA	RISEING STARS: ROY G BIV	PROJECTOUTREACH: REAL TO REEL	INSTANT CHALLENGE
1. Knows the availability and effective use of health services, products, and information							X	
2. Knows environmental and external factors that affect individual and community health							X	
3. Understands the relationship of family health to individual health							X	
4. Knows how to maintain mental and emotional health							X	
5. Knows essential concepts and practices concerning injury prevention and safety							X	
6. Understands essential concepts about nutrition and diet							X	
7. Knows how to maintain and promote personal health	X	X			X		X	
8. Knows essential concepts about the prevention and control of disease	X	X			X		X	X
9. Understands aspects of substance use and abuse					X		X	X
10. Understands the fundamental concepts of growth and development	X	X			X		X	

\*Team members might address these standards as part of their solution in each Challenge, but they are not integral Challenge expectations.

\*21st century skills are employed in all Challenges.

## MATHEMATICS FOR GRADES 3 - 5

### OPERATIONS AND ALGEBRAIC THINKING - GRADES 3-5

#### Represent and solve problems involving multiplication and division

##### Interpret products of whole numbers

- Challenge A: In the Zone teams may use this skill to determine whether to take the risk of the Danger Points.
- Challenge E: Twist-O-Rama teams may use this skill to determine total weight placement held.

### MEASUREMENT AND DATA - GRADES 3-5

#### Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

- Recognize area as an attribute of plane figures and understand concepts of area measurement.
- Measure areas by counting unit squares. (Grade 3)

##### Teams may have to use this skill to:

- Design and construct the vehicles Challenge A: In the Zone
- Tape practice zones Challenge A: In the Zone
- Design and construct the kinetic art in Challenge B: Wind Visible
- Design and construct the masks in Challenge C: In Disguise
- Design and construct the structure in Challenge E: Twist-O-Rama
- Design and construct and the required prop or costume in Challenge E: Twist-O-Rama

#### Geometric measurement

- Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. (Grade 3)
- Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.

- Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure. (Grade 4)

##### Teams may have to use this skill to:

- Design and construct the vehicles Challenge A: In the Zone
- Tape practice zones Challenge A: In the Zone
- Design and construct the kinetic art in Challenge B: Wind Visible
- Design and construct the masks in Challenge C: In Disguise
- Design and construct the structure in Challenge E: Twist-O-Rama
- Design and construct and the required prop or costume in Challenge E: Twist-O-Rama

### GEOMETRY - GRADES 3-5

#### Draw and identify lines and angles, and classify shapes by properties of their lines and angles

- Draw points, lines, line segments, rays, angles, and perpendicular and parallel lines. Identify these in two-dimensional figures. (Grade 4)

##### Teams may have to use this skill to:

- Design and construct the vehicles Challenge A: In the Zone
- Tape practice zones Challenge A: In the Zone
- Design and construct the kinetic art in Challenge B: Wind Visible
- Design and construct the masks in Challenge C: In Disguise
- Design and construct the structure in Challenge E: Twist-O-Rama
- Design and construct and the required prop or costume in Challenge E: Twist-O-Rama

### **Classify two-dimensional figures into categories based on their properties.**

- Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category.

#### **Teams may have to use this geometric skill to:**

- Design and construct the vehicles Challenge A: In the Zone
- Tape practice zones Challenge A: In the Zone
- Design and construct the kinetic art in Challenge B: Wind Visible
- Design and construct the masks in Challenge C: In Disguise
- Design and construct the structure in Challenge E: Twist-O-Rama
- Design and construct and the required prop or costume in Challenge E: Twist-O-Rama

## **MATHEMATICS FOR GRADES 6-8**

### **RATIOS AND PROPORTIONAL RELATIONSHIPS**

#### **Understand ratio concepts and use ratio reasoning to solve problems.**

- Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.
- Use ratio and rate reasoning to solve real-world and mathematical problems. (Grade 6)
- Recognize and represent proportional relationships between quantities. (Grade 7)

#### **Teams may have to use this skill to:**

- In Challenge E: Twist-O-Rama, teams will design and construct a structure made only of glue and materials selected from a Challenge-provided list. The structure must hold weight. Teams will earn points for the total weight held divided by structure's weight in grams.
- Team members must understand the concept of ratio in order to be successful in this Challenge.

### **Expressions and Equations – Grades 6-8**

- Solve real-life and mathematical problems using numerical and algebraic expressions and equations
- Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form.

#### **Teams may have to use this skill to:**

- In Challenge E: Twist-O-Rama, teams may use this skill to determine weight placement held.

### **GEOMETRY – GRADES 6-8**

#### **Solve real-world and mathematical problems involving area, surface area, and volume.**

- Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. (Grade 6)

#### **Teams may have to use this skill to:**

- Design and construct the vehicles Challenge A: In the Zone
- Tape practice zones Challenge A: In the Zone
- Design and construct the kinetic art in Challenge B: Wind Visible
- Design and construct the masks in Challenge C: In Disguise
- Design and construct the structure in Challenge E: Twist-O-Rama
- Design and construct and the required prop or costume in Challenge E: Twist-O-Rama

**GEOMETRY – GRADES 6-8 (CONTINUED)**

**Draw, construct, and describe geometrical figures and describe the relationships between them.**

- Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

**Teams may have to use this skill to:**

- Design and construct the vehicles Challenge A: In the Zone
- Tape practice zones Challenge A: In the Zone
- Design and construct the kinetic art in Challenge B: Wind Visible
- Design and construct the masks in Challenge C: In Disguise
- Design and construct the structure in Challenge E: Twist-O-Rama
- Design and construct and the required prop or costume in Challenge E: Twist-O-Rama

**STATISTICS AND PROBABILITY – GRADES 6-8**

**Investigate chance processes and develop, use, and evaluate probability models**

- Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.

**Teams may have to use this skill to:**

- In Challenge D: Change in RealTee, teams may use this skill to determine the probability of selecting a Communication Technique at the tournament.

**MATHEMATICS / GRADES 9 - 2****GEOMETRY – GRADES 9 - 12**

**Make geometric constructions**

- Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).

**Teams may have to use this skill to:**

- Design and construct the vehicles Challenge A: In the Zone

- Tape practice zones Challenge A: In the Zone
- Design and construct the kinetic art in Challenge B: Wind Visible
- Design and construct the masks in Challenge C: In Disguise
- Design and construct the structure in Challenge E: Twist-O-Rama
- Design and construct and the required prop or costume in Challenge E: Twist-O-Rama

**Modeling with geometry**

- Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).

**Teams may have to use this skill to:**

- Design and construct the vehicles Challenge A: In the Zone
- Tape practice zones Challenge A: In the Zone
- Design and construct the kinetic art in Challenge B: Wind Visible
- Design and construct the masks in Challenge C: In Disguise
- Design and construct the structure in Challenge E: Twist-O-Rama
- Design and construct and the required prop or costume in Challenge E: Twist-O-Rama

**ENGLISH LANGUAGE ARTS / GRADES 3-5****READING STANDARDS FOR INFORMATIONAL TEXTS – GRADES 3-5****Key Ideas and Details**

- Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (Grade 3)
- Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text. (Grade 4)
- Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (Grade 5)

**Teams may have to use this skill to:**

- In all Challenges, team members must read carefully and use the information and directions in the text (the Challenge) to determine the specifics of the Challenge.

**Key Ideas and Details**

- Determine the main idea of a text; recount the key details and explain how they support the main idea. (Grade 3)
- Determine the main idea of a text and explain how it is supported by key details; summarize the text. (Grade 4)
- Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text. (Grade 5)

**Teams may have to use this skill to:**

- In all Challenges, team members must identify the main idea (the basis) of the Challenge and the key ideas (Challenge requirements). The identification of the Challenge basis and Challenge requirements is key to preparing a successful solution.

**Craft and Structure**

- Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently. (Grade 3)

**Teams may have to use this skill to:**

- In all Challenges, team members can use key words in order to locate important information. In Challenge A: In the Zone, Challenge D: Change in RealTee, and Challenge E: Twist-O-Rama, team members must use other features (i.e. diagrams and tables) in order to locate important information.

**Integration of Knowledge and Ideas**

- Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).
- Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

**Teams may have to use this skill to:**

- In all Challenges, team members can use key words in order to locate important information. In Challenge A: In the Zone, Challenge D: Change in RealTee, and Challenge E: Twist-O-Rama, team members must use other features (i.e. diagrams and tables) in order to locate important information.

**WRITING STANDARDS – GRADES 3-5**

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**Texts Types and Purposes**

- Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.
  - a. Establish a situation and introduce a narrator and/or characters; organize an event sequence that unfolds naturally. (Grade 3)

Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally. (Grades 3 and 4)

- b. Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations. (Grade 3)

Use dialogue and description to develop experiences and events or show the responses of characters to situations. (Grade 4)

Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations. (Grade 5)

- c. Provide a sense of closure. (Grade 3)  
Provide a conclusion that follows from the narrated experiences or events. (Grades 4 and 5)

**Teams may have to use this skill to:**

- In all Challenges, team members must develop their solution in the form of a theatrical presentation. Thus, teams will write scripts that include a setting, characters, a plot with an organized sequence of events, etc.

**WRITING STANDARDS – GRADES 3-5 (CONTINUED)****Production and Distribution of Writing**

- With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others. (Grade 3)
- With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting. (Grades 4 and 5)

**Teams may have to use this skill to:**

- In all Challenges, teams have the option to use technology to produce their team's script.

**Research to Build and Present Knowledge**

- Conduct short research projects that build knowledge about a topic. (Grade 3)
- Conduct short research projects that build knowledge through investigation of different aspects of a topic. (Grades 4 and 5)

**Teams may have to use this skill to:**

- In all Challenges, teams must conduct research on the topic/theme of the Challenge.

**SPEAKING AND LISTENING STANDARDS – GRADES 3-5****Comprehension and Collaboration**

- Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners building on others' ideas and expressing their own clearly. (Grades 3, 4, and 5).
  - a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion. (Grades 3, 4, and 5)
  - b. Follow agreed-upon rules for discussions (e.g., gaining the floor in respectful ways, listening to others with care, speaking one at a time about the topics and texts under discussion). (Grades 3, 4, and 5)

- c. Ask questions to check understanding of information presented, stay on topic, and link their comments to the remarks of others. (Grade 3)
- d. Pose and respond to specific questions to clarify or follow up on information, and make comments that contribute to the discussion and link to the remarks of others. (Grades 4 and 5)
- e. Explain their own ideas and understanding in light of the discussion. (Grade 3)
- f. Review the key ideas expressed and draw conclusions in light of information and knowledge gained from the discussions. (Grades 4 and 5)

**Teams may have to use this skill to:**

- In all Challenges, team members must work collaboratively in order to be successful in Destination Imagination. Fostering teamwork skills is one of the major components of the Destination Imagination program.

**Presentation of Knowledge and Ideas**

- Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (Grade 3)
- Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly at an understandable pace.

**Teams may have to use this skill to:**

- In all Challenges, teams must present their solution in a live presentation before a panel of Appraisers (Destination Imagination's version of judges). Teams must develop appropriate presentation skills to be successful.

## LANGUAGE STANDARDS – GRADES 3-5

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### Knowledge of Language

- Use knowledge of language and its conventions when writing, speaking, reading, or listening.
  - a. Choose words and phrases for effect. (Grade 3)
  - b. Choose words and phrases to convey ideas precisely. (Grade 4)
  - c. Expand, combine, and reduce sentences for meaning, reader/listener interest, and style. (Grade 5)

#### Teams may have to use this skill to:

- In all Challenges, team members must use knowledge of language to effectively convey the message of their team created Challenge solution.

## ENGLISH LANGUAGE ARTS / GRADES 6-8

## READING STANDARDS FOR INFORMATIONAL TEXTS – GRADES 6-8

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### Key Ideas and Details

- Determine a central idea of a text and how it is conveyed through particular details. (Grade 6)
- Determine two or more central ideas in a text and analyze their development over the course of the text. (Grade 7)
- Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas. (Grade 8)

#### Teams may have to use this skill to:

- In all Challenges, team members must read carefully and use the information and directions in the text (the Challenge) to determine the specifics of the Challenge.

## WRITING STANDARDS – GRADES 6-8

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### Texts Types and Purposes

- Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.

Engage and orient the reader by establishing a context and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically. (Grades 6, 7, and 8)

Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters. (Grades 6, 7, and 8)

#### Teams may have to use this skill to:

- In all Challenges, team members must develop their solution in the form of a theatrical presentation. Thus, teams will write scripts that include a setting, characters, a plot with an organized sequence of events, etc.

### Production and Distribution of Writing

- Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grades 6, 7, and 8)
- Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.

Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.

Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.

#### Teams may have to use this skill to:

- In all Challenges, teams must produce a well-developed presentation. In order to do so, teams must use clear and coherent writing skills to produce a well-developed script.
- In all Challenges, teams have the option to use technology to produce their team's script.



**WRITING STANDARDS – GRADES 6-8 (CONTINUED)****Research to Build and Present Knowledge**

- Conduct short research projects that build knowledge about a topic. (Grade 6)

Conduct short research projects that build knowledge through investigation of different aspects of a topic. (Grades 7 and 8)

**Teams may have to use this skill to:**

- In all Challenges, teams must conduct research on the topic/theme of the Challenge.

**SPEAKING AND LISTENING STANDARDS – GRADES 6-8****Comprehension and Collaboration**

- Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led).
  - a. Come to discussions prepared, having read or studied required material; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion. (Grades 6, 7, and 8)
  - b. Follow rules for collegial discussions, set specific goals and deadlines, and define individual roles as needed. (Grades 6, 7, and 8)
  - c. Pose and respond to specific questions with elaboration and detail by making comments that contribute to the topic, text, or issue under discussion. (Grades 6, 7, and 8)

**Teams may have to use this skill to:**

- In all Challenges, team members must work collaboratively in order to be successful in Destination Imagination. Fostering teamwork skills is one of the major components of the Destination Imagination program.

**ENGLISH LANGUAGE ARTS / GRADES 9-12****READING STANDARDS FOR INFORMATIONAL TEXTS – GRADES 9 - 12****Key Ideas and Details**

- Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text. (Grades 9-12)
- Determine a central idea of a text and analyze its development over the course of the text. (Grades 9-12)

**Teams may have to use this skill to:**

- In all Challenges, team members must read carefully and use the information and directions in the text (the Challenge) to determine the specifics of the Challenge.

**WRITING STANDARDS – GRADES 9-12****Texts Types and Purposes**

- Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences. (Grades 9- 12)
  - a. Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing narrator and/or characters; create a smooth progression of experiences or events.
  - b. Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters.
  - c. Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.
  - d. Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.
  - e. Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

**Teams may have to use this skill to:**

- In all Challenges, team members must develop their solution in the form of a theatrical presentation. Thus, teams will write scripts that include a setting, characters, a plot with an organized sequence of events, etc.



## **Production and Distribution of Writing**

- Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. (Grades 9 -12)

### **Teams may have to use this skill to:**

- In all Challenges, teams have the option to use technology to produce their team's script.

## **Research to Build and Present Knowledge**

- Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. (Grades 9 – 12)
- Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question (Grades 9 -12)

### **Teams may have to use this skill to:**

- In all Challenges, teams must conduct research on the topic/theme of the Challenge.

## **SPEAKING AND LISTENING STANDARDS – GRADES 9 - 12**

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### **Comprehension and Collaboration**

- Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.
  - a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
  - b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.
  - c. Propel conversations by posing and responding to questions that relate the current discussion

to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or Challenge ideas and conclusions.

- d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

### **Teams may have to use this skill to:**

- In all Challenges, team members must work collaboratively in order to be successful in Destination Imagination. Fostering teamwork skills is one of the major components of the Destination Imagination program.


**CHALLENGE  
REQUIREMENT**
**STEM CONNECTION**

1. Vehicles

Teams will use the **Engineering Design Process** to design and construct vehicles that will travel and stop in scoring zones.

When designing and constructing team-created Vehicles, the team will investigate the **physical concepts of motion and energy**.

Teams must utilize the **mathematical concepts of geometry (properties of plane and solid figures) and measurement**.

2. Zones

Teams must have basic knowledge of **customary and/or metric measurements** in order to understand the Zone boundaries.

3. Travel

In order for teams to meet the requirements of the Travel section, teams have to investigate the **physical concepts of motion and energy**.

4. Danger

Teams must take into consideration the **mathematical concept of probability** when determining whether they should select the Danger Points option.


**CHALLENGE  
REQUIREMENT**
**STEM CONNECTION**

1. The Story

For this Challenge requirement, teams must research the **scientific concept of wind energy**.

2. Kinetic Art

For this Challenge requirement, teams must use **wind energy to start the motion** of a piece of artwork.

Demonstrates the **collection and conversion of wind energy into usable energy**.


**CHALLENGE  
REQUIREMENT**
**STEM CONNECTION**

1. The Story

This section of the challenge does not require technology. However, many teams may use **technology** to produce a solution.

This section of the challenge does not require technology. However, many teams may use **technology** to produce a solution.

2. The Disguise

Teams will use **principles of geometry** in the design and construction of the Morphing Mask and the Decorative Mask.

The Morphing Mask must change appearance during the presentation. Although the challenge does not require it, teams may use **technology and technical methods** to cause the mask to morph.



#### CHALLENGE REQUIREMENT

#### STEM CONNECTION

##### 1. The Story

In this Challenge, teams do not plan a Presentation in advance. They research and practice a variety of improvisational elements. At the tournament, elements are randomly selected and used in the Presentation. Teams may use the **mathematical concept of probability** to determine the chance of an improvisational element being selected.



#### CHALLENGE REQUIREMENT

#### STEM CONNECTION

##### 1. The Structure

Teams may use the **Engineering Design Process** to design and construct a structure that must support weight and withstand the impact of a battering ram.

##### 2. Structure Specifications

Teams must **study the properties of a variety of materials and glue** in order to design and construct a structure that will support weight and withstand the impact of a battering ram.

The team must have **knowledge of customary and metric measurements** in order to design and construct a structure that meets height and weight specifications.

##### 3. Weight Placement Held

Teams must have knowledge of **whole number computation and ratios** in order to determine the raw scores earned for Weight Placement.



#### CHALLENGE REQUIREMENT

#### STEM CONNECTION

##### 1. The Presentation

This Challenge requirement allows for the use of photographs and recordings. Teams are not required, but may use **technology** to produce photographs and recordings.

##### 2. The Movie

Teams will use **technology** to produce a movie that outlines their service learning project.



#### CHALLENGE REQUIREMENT

#### STEM CONNECTION

##### 1. Story

This section of the challenge does not require technology. However, many teams may use technology to produce a solution.

##### 2. Research and Integration

For this Challenge requirement, the teams must Investigate physical concepts of light and color.

##### 3. Character Appearance

Teams must have basic understanding of customary and/or metric measurements to produce a solution.