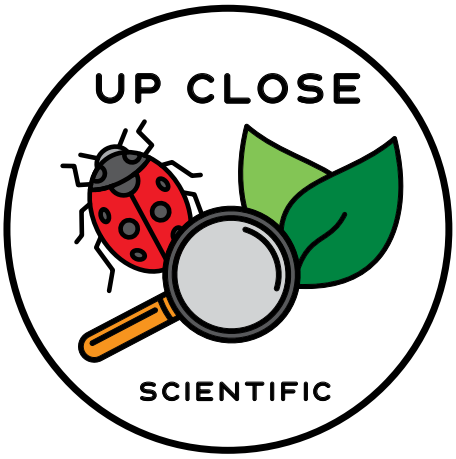
2021-22 CHALLENGE SEASON

UP CLOSE

SCIENTIFIC

DESTINATION IMAGINATION®



"must"
"will"
"may not", "will not", "can't", "won't", "not"
"points"
"may"

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Review this information before beginning work on your team's solution.

2 The Central Challenge

Read this section thoroughly to make sure your team understands it.

7 Team Choice Elements

Create two Team Choice Elements that show off your team's interests, skills, areas of strength, and talents.

8 At the Tournament

Learn about the team requirements at the tournament.

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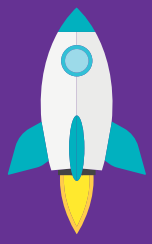
Review all of the elements that will be scored during your team's Presentation.

10 Tournament Data Form

Reference this section as you complete the online Tournament Data Form, found in the Resource Area of **DestinationImagination.org**.

GETTING STARTED

I. THE CENTRAL CHALLENGE | II. TEAM CHOICE ELEMENTS | III. AT THE TOURNAMENT | IV. SCORING | TOURNAMENT DATA FORM



Approaching this Challenge

This Challenge can be solved on many levels, ranging from the simple to the complex.
Focus on solving this Challenge based on the intent in which it was designed. All Challenge requirements must be met unless otherwise stated using the terms "should" or "may." If you find the details of the Challenge unclear, we encourage you to ask for a Team Clarification. (See Rules of the Road.) Remember, if it doesn't say you can't, then you can.

Solving the Challenge

The information in the following materials is binding on all teams. Your team must read and follow this Challenge in its entirety, the Rules of the Road resource for teams, and all Published Clarifications (online at **DestinationImagination.org**).

Team Budget

The total value of the materials used must not exceed **$150US.** $1 $$

Time Limit

Complete the Presentation (including setup) in **8 minutes or less.**

☑ Tournament Data Form

Your team must explain elements of your Challenge solution on the online Tournament Data Form, found in the Resource Area of **DestinationImagination.org**. A version of the form can be found at the end of this Challenge for your reference. The check mark icon pinpoints the elements that will appear on the online Tournament Data Form.

I. THE CENTRAL CHALLENGE

A. Story

1. ☑ Create and present a story about at least one character who encounters a Mysterious Object while in at least one Microworld.
2. For this Challenge, a Mysterious Object is a visible and tangible object with an identity and/or purpose that is not immediately known and/or recognized by the character(s).
3. ☑ The Mysterious Object may be any visible and tangible object your team chooses.
4. ☑ At any time during the story, at least one character must discover the identity and/or purpose of the Mysterious Object.
5. Your team may include more than one mysterious object in your Presentation. However, only one Mysterious Object will earn points for **IV.A.3**.
6. The Mysterious Object should be visible from 25ft (7.62m) away.
7. For this Challenge, a Microworld is a real, Earth-based environment that is too small for humans to see clearly without using a microscope.
8. ☑ Integrate research about the Microworld(s) and/or the science of microscopy into the Presentation.
9. Your team may choose how much of the story is set in the Microworld(s). If too little of the story is set in the Microworld(s), your team's scores for **IV.A.1** and **IV.A.4** may be affected. If at least one character does not encounter the Mysterious Object while in at least one Microworld, your team may receive an Illegal Procedure deduction for **IV.A.1**.
10. The story may be set in any time period(s): past, present, or future.

I. THE CENTRAL CHALLENGE

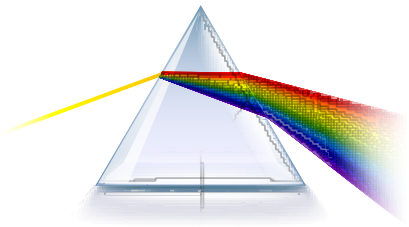
B. Microworld Scenery

1. ☑ Design and create at least one piece of Microworld Scenery. All pieces of Microworld Scenery included in the Presentation will earn points collectively for **IV.B.1**.
2. For this Challenge, Microworld Scenery is a backdrop or set piece that depicts the Microworld(s) in a three-dimensional way. This means that the depiction of the Microworld(s) has physical depth, height, and length. If the physical depth, height, and/or length of the depiction of the Microworld(s) is too small, your team's score for **IV.B.1** may be affected.
3. ☑ Use the style of one of the Microscopy Imaging Techniques found in Table 1 to visually enhance the Microworld Scenery.

Table 1: Microscopy Imaging Techniques	
Bright Field Microscopy	Fluorescence/Confocal Microscopy
Dark Field Microscopy	Phase Contrast Microscopy
Electron Microscopy	Polarization Microscopy

4. The Microworld Scenery may use more than one Microscopy Imaging Technique style to enhance the depiction of the Microworld(s). However, only one Microscopy Imaging Technique style will earn points for **IV.B.2**.

5. The Microscopy Imaging Technique style may enhance the depiction of the Microworld(s) using any visual method and/or manner. Your team may choose whether the Microscopy Imaging Technique style is used in a static or dynamic way.
6. Your team may choose how long the Microscopy Imaging Technique style is used to enhance the depiction of the Microworld(s) and how much of the Microworld Scenery is involved. If the use of the Microscopy Imaging Technique style is is too brief and/or too small, your team's score for **IV.B.2** may be affected.
7. The Microworld Scenery and how it is enhanced by the Microscopy Imaging Technique style should be visible from 25ft (7.62m) away.

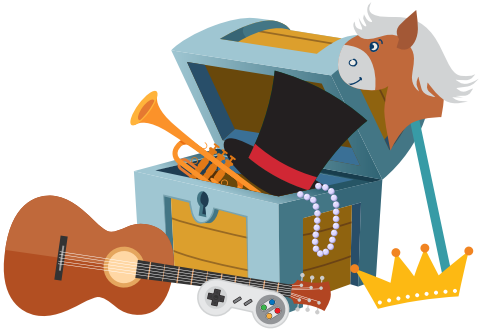


C. Visual Effect

1. ☑ Design and create a Visual Effect that uses Technical Methods to visually reveal, enhance, and/or animate the Mysterious Object (see Sections **I.A.1**-**I.A.6**) in the Microworld(s).
2. For this Challenge, Technical Methods refers to the use of principles from fields such as chemistry, computer science, electricity, hydraulics, mathematics, mechanical engineering, physics, or structural engineering. Other technical fields are also acceptable.
3. Your team will earn points for Technical Design and Technical Innovation based on all Technical Methods used or attempted during the Presentation to initiate, operate, and/or produce the Visual Effect.
4. If the Visual Effect is not successful, your team may still earn points for the Technical Design and the Technical Innovation of the methods used in the attempt. Your team's score for Technical Design may be affected.
5. Design and build all parts of the Visual Effect using your own ideas and skills. Your team may incorporate commercially produced items, but for scoring, Appraisers will only consider your team's changes and/or additions to those items.
6. Technical Methods using less direct team member involvement may earn more points for Technical Design and Technical Innovation than methods that have more direct team member involvement.

7. Your team may include more than one visual effect in the Presentation. However, only one Visual Effect will earn points for **IV.C**.
8. Your team may choose how long the Visual Effect lasts. If the Visual Effect is too brief, your team's score for **IV.C.1** may be affected.
9. The Visual Effect should be visible from 25ft (7.62m) away.
10. The Visual Effect and the use of the Microscopy Imaging Technique style must not be any part of one another.

II. TEAM CHOICE ELEMENTS



A. ☑ Present **TWO** creations that show off your team's interests, skills, areas of strength, and talents. Your team may create anything you wish, including props, music, technical gadgets, costumes, physical actions, etc.

B. Each Team Choice Element should have a meaningful connection to your team's Central Challenge solution and must be presented as part of the 8-minute Presentation.

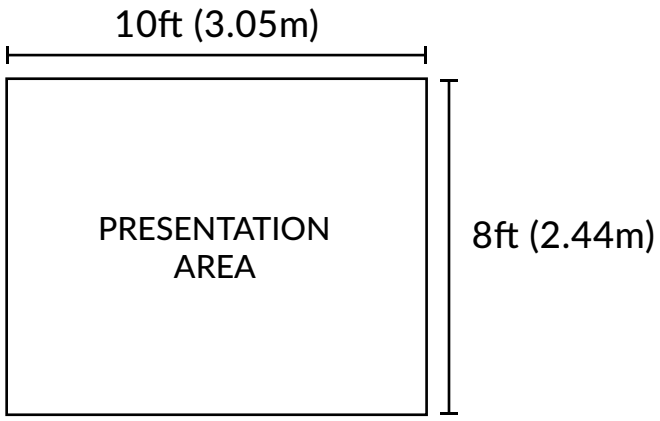
C. A Team Choice Element must not be a specific item that is required in the Central Challenge that is already being evaluated. A Team Choice Element **MAY** be a single unique **PART** of a required item, as long as it can be evaluated as a stand-alone item. Or, a Team Choice Element **MAY** be a larger item that includes a required element, as long as the required element can be evaluated as a single unique part of the Team Choice Element. Examples of these can be found in Rules of the Road.

D. Both Team Choice Elements may be presented at the same time **ONLY IF** both can be easily identified and scored separately.

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

III. AT THE TOURNAMENT

A. **Presentation Area:** The minimum required size is 8ft x 10ft (2.44m x 3.05m). Your team may use any additional space that tournament officials designate as available, but your team should be prepared to present your solution in the minimum space. In most cases, the edges of the 8ft x 10ft (2.44m x 3.05m) area will not be taped. The Presentation Area will be a large space with a hard floor, such as wood, linoleum, concrete, or very short-napped carpet. Your team should be prepared to deal with a variety of floor surfaces. A single 3-prong electrical outlet will be provided at the edge of each Presentation Area for your team's use.



B. **Forms:** Your team will need to fill out the online Tournament Data Form, Expense Report, and Prep Checklist, which includes the Declaration of Independence. These forms can be found in the Resource Area of **DestinationImagination.org**.

C. **Team Identification Sign:** Your team should provide a freestanding sign displaying your team name, Team Number, school/organization, and level. The purpose of the sign is to identify your team to the Appraisers. (See Rules of the Road, Team Identification Sign.)

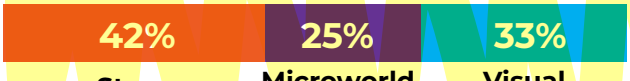
D. **Instant Challenge:** At a tournament, your team will solve one Instant Challenge in addition to showcasing your Team Challenge solution. Instant Challenges are kept confidential until the day of the tournament. (See Rules of the Road.) Because Instant Challenge is worth 25% of a team's overall score at a tournament, teams often practice different types of Instant Challenges throughout the season. (See Roadmap.)

* Important!

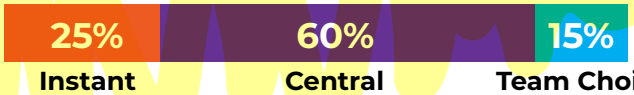
IV. SCORING

Central Challenge: Up to 240	**A. Story (See Section I.A.)**	**Up to 100**
	1. **Creativity of the story about at least one character who encounters a Mysterious Object while in at least one Microworld** A story is more creative when there is novel development of the storyline and characters.	Up to 30
	2. **Clear and effective storytelling** This means the story has a beginning, a middle, and an end and is presented in a way that is easy to follow and understand.	Up to 20
	3. **Dramatic impact of how the character(s) discover the identity and/or purpose of the Mysterious Object** This means how the character(s) discovering the identity and/or purpose of the Mysterious Object affects the story.	Up to 20
	4. **Integration of research about the Microworld(s) and/or the science of microscopy into the Presentation**	Up to 30
	B. Microworld Scenery (See Section I.B.)	**Up to 60**
	1. **Visual Impact of the Microworld Scenery** This includes, but is not limited to, how the Microworld(s) are depicted in a three-dimensional way. This also includes the use of imagery, themes, color, shapes, and/or other methods to create the physical appearance of the Microworld Scenery.	Up to 30
	2. **Effective use of the Microscopy Imaging Technique style to visually enhance the Microworld Scenery** This means how well the Microscopy Imaging Technique style visually enhances the depiction of the Microworld(s).	Up to 30
	C. Visual Effect (See Section I.C.)	**Up to 80**
	1. **Visual Impact of the Visual Effect** This includes, but is not limited to, how the Visual Effect visually reveals, enhances, and/or animates the Mysterious Object.	Up to 30
	2. **Technical Design of the Visual Effect** Technical Design is the result of a plan for carrying out or accomplishing a task. A high-quality design shows careful planning and is effective, efficient, and reliable.	Up to 25
	3. **Technical Innovation of the Visual Effect** Technical Innovation includes how new, unique, original, or creative the methods are for carrying out or accomplishing a task.	Up to 25
Team Choice Elements: Up to 60	**D. Team Choice Element 1 (See Section II.)**	**Up to 30**
	1. **Creativity and originality**	Up to 10
	2. **Quality, workmanship, or effort that is evident**	Up to 10
	3. **Integration into the Presentation**	Up to 10
	E. Team Choice Element 2 (See Section II.)	**Up to 30**
	1. **Creativity and originality**	Up to 10
	2. **Quality, workmanship, or effort that is evident**	Up to 10
	3. **Integration into the Presentation**	Up to 10

Central Challenge



Putting It All Together



TOURNAMENT DATA FORM PAGE 1

TEAM INFORMATION

Team Name: _____ Team Number: ☐☐☐ - ☐☐☐☐☐

School/Organization: _____ Level: ☐EL ☐ML ☐SL ☐UL

To our teams and Team Managers:

Help your Appraisers identify the required elements of your Challenge solution so they can award you all of the points you have earned. Please use this 3-page form as a reference to help you complete your online Tournament Data Form, found in the Resource Area of **DestinationImagination.org**. The Team Manager must submit the Tournament Data Form on behalf of the team using the team's words. The team members must craft the explanations.

PART 1: REQUIRED FORMS

A complete checklist of the required forms is below. None of the forms listed below can be used as a scoring item. All forms must be completed online in the Resource Area of **DestinationImagination.org** unless otherwise specified by your Affiliate Director and/or Tournament Director.

Your team needs to complete:

PARTS 2, 3, and 4 of the Tournament Data Form

Part 4 helps your team reflect on how you experienced the creative process.

Expense Report

Be sure to upload copies of your receipts to accompany your Expense Report.

Prep Checklist

This includes safety information, a checklist of required elements, and Declaration of Independence information.

Team Identification Sign

Be sure to bring this to the Presentation Site. See Rules of the Road for more information.

Published Clarifications

You need to be sure you are aware of any Published Clarifications for this Challenge, available at **DestinationImagination.org**.

PART 2: BRIEF DESCRIPTION OF TEAM CHOICE ELEMENTS

What is your Team Choice Element 1?

Please write a brief description of your Team Choice Element. Make sure that Appraisers know **exactly** what you want them to evaluate. What would you like them to know about the Team Choice Element?

What is your Team Choice Element 2?

Please write a brief description of your Team Choice Element. Make sure that Appraisers know **exactly** what you want them to evaluate. What would you like them to know about the Team Choice Element?

TOURNAMENT DATA FORM PAGE 2

TEAM INFORMATION

Team Name: _____ Team Number: ☐☐☐ - ☐☐☐☐☐

School/Organization: _____ Level: ☐EL ☐ML ☐SL ☐UL

PART 3: BRIEF DESCRIPTION OF SCORED ELEMENTS

This Challenge asks the team to supply the following information to help the Appraisers evaluate your solution.

1. Briefly describe your story about at least one character who encounters a Mysterious Object while in at least one Microworld.

2. What is your Mysterious Object? Briefly describe the Mysterious Object's identity and/or purpose that is discovered by at least one character in your story.

3. Identify your Microworld(s). What research about the Microworld(s) and/or the science of microscopy has your team integrated into the Presentation?

4. Identify and briefly describe your Microworld Scenery and how it depicts your team's Microworld(s) in a three-dimensional way.

5. What Microscopy Imaging Technique style from **Table 1** did your team use? How is it used to enhance your Microworld Scenery?

6. Briefly describe your Visual Effect. What Technical Methods did you use to visually reveal, enhance, and/or animate the Mysterious Object in the Microworld(s)?

TOURNAMENT DATA FORM PAGE 3

TEAM INFORMATION

Team Name: _____ Team Number: ☐☐☐ - ☐☐☐☐

School/Organization: _____ Level: ☐EL ☐ML ☐SL ☐UL

PART 4: THE CREATIVE PROCESS

Reflect on how your team experienced each stage of the creative process as you solved the Team Challenge.

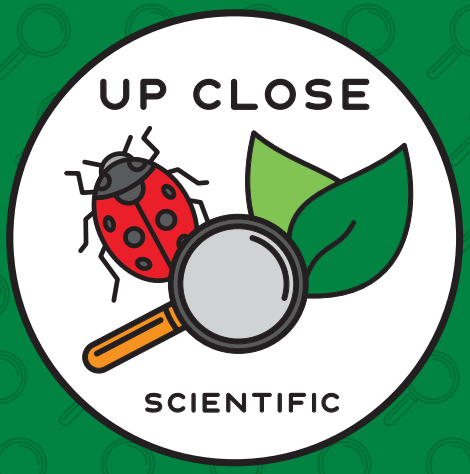
1. **RECOGNIZE:** What process did your team go through in order to understand all the issues or points of the Challenge?

2. **IMAGINE:** How did your team use your imagination to explore new ideas about possible solutions to the Challenge?

3. **COLLABORATE AND INITIATE:** How did your team work in a collaborative way? How did your team take risks and go beyond the minimum as you committed to a solution?

4. **ASSESS:** How did your team assess your solution as it was being created?

5. **EVALUATE AND CELEBRATE:** Reflect on your experience. What did your team learn? How did your team celebrate your journey and accomplishments?



The Team Manager/Coordinator of a team with an active, registered Team Number is given permission to make 10 copies of this document for their team's use only, provided these copies are supplied to participants solely for their use in Destination Imagination.

The PDF files for the Team Challenges, Roadmap, and Rules of the Road are available for download at **Resources.DestinationImagination.org**.

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