

Team Challenge B:

DI[®]-BOT

Structural Engineering
Robotic Technology
Research
Technical Design and Construction
Science
Theater Arts
Teamwork

Challenge B: DI®-BOT

The Destination:

Where This Challenge Will Take You!

Robots – doing our chores and serving our every need! What could be better? Robotic Technology has changed our lives and made our dreams a reality. Gaming systems, cell phones, cars and factories all use Robotic Technology. What will Robotic Technology accomplish next? How will our lives change because of it? You get to decide and use your knowledge of Robotic Technology to show us what may happen!

Points of Interest! Your team will:

- Learn about Robotic Technology and the changes it creates.
- Create an original Story which envisions and shows how at least one character's life may be changed by Robotic Technology.
- Design, create, and integrate a device called DI-BOT, which completes a motion or task, into the Story.
- Create a method to change at least one prop or set piece, or part(s) of the prop or set piece, into DI-BOT, or a part of DI-BOT.
- Create a scene change that enhances the Presentation by providing an effective transitional link from one scene to another.

Time Limit:

The team must complete the Presentation (including setup) in **eight minutes**.

Team Budget:

The total value of the materials used may not exceed **\$150 US**.

Roadmap for Success:

This Challenge can be solved on many levels, ranging from the simple to the complex. We recognize that there are different ways to be creative. This Challenge is designed to engage all types of creativity—including off-the-wall, outlandish thinking, analytical thinking, and everything in between. Please approach this Challenge in the true spirit of Destination ImagiNation: try foremost to solve the Challenge. If you find the intent or any of the details of the Challenge unclear, we encourage you to ask for a Clarification. (See the *Rules of the Road*.) Remember—if it doesn't say you can't, then you can. However, if it says you "must" perform specific requirements, then those requirements have to be met.

Team Number

Teams and individuals using these Program Materials must hold a 2009-10 Team Number. The Destination ImagiNation Team Number is a license to compete in sanctioned Tournaments and/or to use the Program Materials for educational purposes within your team, school, group, or organization. Online access to Program Materials for teams who have purchased Team Numbers is on www.IDODI.org.

- My 2009-10 Team Number is: _____ - _____
- My team is planning to compete in a sanctioned Tournament.
- I have registered for that Tournament with the:
- Regional or
- Affiliate Director

In order to successfully solve this Challenge, teams must read and follow:

Team Challenge

- A. Itinerary: *The Central Challenge* (240 points)
- B. Itinerary: *Side Trips* (60 points)
- C. Presentation Site
- D. Reward Points

Rules of the Road

Published Clarifications (online at www.IDODI.org)

The information in these materials is binding on all teams.

Team Managers are strongly encouraged to read and use:

- Team Manager Guide*
- Charting Your Course*
- Instant Challenge Practice Set*
- TravelGuide for Teams* (available online after Jan 1, 2010)

A. Itinerary:

The Central Challenge (240 points)

1. **The Intent of this Challenge** is that the team will learn about Robotic Technology and create a DI-BOT that will perform a team-designed motion or task. The team will create and present an original Story that integrates the DI-BOT and tells how the changes created by Robotic Technology affects a character's life.
2. **The Story:** The team will create a theatrical presentation of an original **Story** that is a clearly defined series of events that unfolds as the Performance is presented.
 - a. The Story must include at least one character whose life is changed by Robotic Technology. The Story must show the effect of that change on the character's life. There are no restrictions on the characters. The Story may be set in any location, real or imaginary, and in any time period.
 - i. The Presentation may show the effect of the change on more than one character, but only the one character listed on the *Tournament Data Form* will be appraised.
 - ii. Teams will earn points for the **Dramatic Portrayal** of the effect of the change on a character's life during the Presentation.
 - b. The team will research Robotic Technology and will earn points for creatively integrating their knowledge into the plot of their Story and Presentation.
 - c. The original Story must have at least two scenes. The team will earn points for the creativity and the clear and effective presentation of the Story.
3. **DI-BOT:** The team must use what they have learned about Robotic Technology to design and construct a DI-BOT that is creatively incorporated into the Story. For the purposes of this Challenge, a DI-BOT is designed to interact with its environment and complete a motion or task without **Direct Physical Contact**.
 - a. The Presentation must include at least one prop, or part(s) of the prop(s), that visibly changes to become a DI-BOT, or part of a DI-BOT, during the Presentation. The change may be simple or complex.
 - i. The team may use any method(s) they choose to create the change, including Direct Physical Contact.
 - ii. The change must occur before the DI-BOT completes the motion or task described in A.3.b.
 - iii. The team will earn points for the new and/or unexpected methods used to change the prop, or part(s) of the prop(s), into the DI-BOT or a part of the DI-BOT.
 - b. The DI-BOT must complete a team-defined motion or task during the Presentation using **Technical Methods**.
 - i. The team may choose any motion or task for the DI-BOT to complete. The team will describe the motion or task on the Tournament Data Form.
 - ii. The DI-BOT must complete the team-defined motion or task without Direct Physical Contact by a team member. The team may have Direct Physical Contact with the DI-BOT during any other part of the Presentation.



Special Definitions

Dramatic Portrayal: To clearly communicate a message or image to the audience by using one or more theatrical elements and/or techniques.

Direct Physical Contact: Direct Physical Contact is the use of body parts such as hands, legs, or arms to manipulate a DI-BOT. The team can use a device to indirectly initiate a DI-BOT's motion or task. The device may be very simple. A piece of material that simply covers a body part does not qualify as a device.

Technical Methods: Refers to how the principles of science and engineering are used in the team-created DI-BOT to initiate or perform its task(s). The scientific principles may come from biology, chemistry, computer science, physics, and mathematics. Engineering principles may come from mechanical, structural, electrical, and civil fields. Other technical fields are also acceptable.



Special Definitions

Technical Design: The result of a plan for exhibiting or accomplishing a task. A well-designed DI-BOT shows careful planning, and uses effective, efficient, and reliable Technical Methods.

Technical Innovation: How the mechanical, electronic, structural and other technical parts of the team-created DI-BOT are used or combined in new, unique, or creative ways to complete the motion or task.

- c. There are no restrictions on the appearance of the DI-BOT. The team must design and construct a DI-BOT using their own ideas and skills from team-supplied materials. The DI-BOT **MUST NOT be a team member(s)**. If the DI-BOT is a team member(s), the team will receive no score for D.2.c, D.2.d and D.2.e.
 - d. Individual parts of a DI-BOT may be commercially produced or manufactured, or the individual parts of a DI-BOT may be from commercially available kits.
 - i. DI-BOTs that are created and constructed from individual parts or parts obtained from kits and assembled in novel ways, and DI-BOTs that display a high degree of integration of their parts, will receive higher scores for **Technical Design** and **Technical Innovation**.
 - ii. DI-BOTs assembled by following step-by-step instructions from a commercially available kit or design, or are commercially-produced or manufactured (including ones that have been cosmetically or decoratively altered by the team), will receive much lower scores for Technical Design and Technical Innovation.
 - iii. Teams should be prepared to explain to the Appraisers the ideas and skills they used in the design and construction of their DI-BOTs.
 - e. The team's DI-BOT will earn points for its creative integration into the Story, for completing a team-determined motion or task, for Technical Design, and for Technical Innovation.
4. **Scene-Change Transition:** The team will create a Scene-Change Transition to be used between two scenes during the Presentation.
- a. For the purposes of this Challenge, a Scene-Change Transition is the art of passing from one scene to another by using one or more theatrical techniques. Teams will earn points for the skillful and artistic manner used to arrange or manipulate the change between the scenes. It should provide an effective bridge between the two scenes.
 - i. The Scene-Change Transition may use visual effects, sound effects, staging, lighting, dialogue, dance or any other theatrical technique(s).
 - ii. Challenge-Specific Lighting Limitation: The lighting at the Presentation Site WILL NOT be allowed to be dimmed or turned off during the team's Performance.
 - b. The team will earn points for the successful presentation of the Scene-Change Transition, the new and/or unexpected methods used to produce the Scene-Change Transition, and the effectiveness of the Scene-Change Transition.
5. **Team Identification Sign:** Your team should provide a free-standing Identification Sign (ID Sign) displaying your team's Team Name, School/Organization Name, Team Number, and Level. It needs to be approximately 2ft x 3ft (.61m x .91m) and **cannot be used as a scoring element**. The sign will be used only for the purpose of identifying your team during your Presentation, and will be exempt from cost. Your team will not receive a deduction if you do not provide a sign, but it will help the Appraisers and the audience to know who is performing.

B. Itinerary: *Side Trips* (60 points)

In addition to the above requirements, the team must present **TWO** creations called *Side Trips* that show off their interests, skills, areas of strength, and talents. **The team may create anything they wish for *Side Trips*** including props, music, technical gadgets, costumes, physical actions, etc.

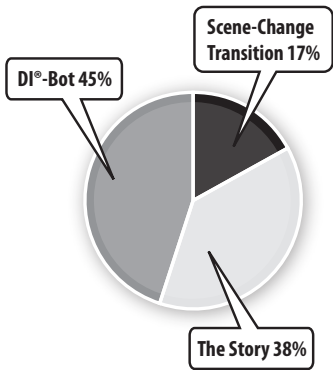
1. The team must present both *Side Trips* as part of the eight-minute Presentation and each *Side Trip* should have a meaningful connection to the team's *Central Challenge* solution. Each *Side Trip* must be described briefly on the *Tournament Data Form* found at the end of this Challenge.
2. A *Side Trip* may not be a specific item that is required in the *Central Challenge* that is already being evaluated. A *Side Trip* MAY be a single unique PART of a required item, as long as it can be evaluated as a stand-alone item. Both *Side Trips* may be presented at the same time ONLY IF both can be easily identified and scored separately. Examples of these can be found in the *Rules of the Road*.
3. Each *Side Trip* will be evaluated in two ways: for the Creativity and Originality of the *Side Trip*, and for the Quality, Workmanship, and/or Effort that is evident. Evaluation of *Side Trips* is subjective.

C. Presentation Site

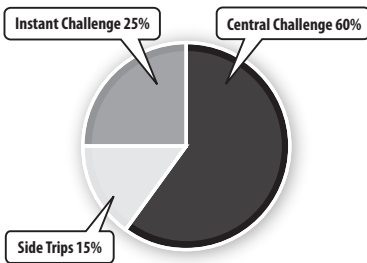
1. **Floor Surface:** Destination ImagiNation strongly suggests that the Presentation Site be a large space with a hard floor such as wood, linoleum, concrete or very short-napped carpet. Teams should be prepared to deal with a variety of floor surfaces.
2. **Site Size:** The minimum required overall size of the Presentation Site is 8ft deep x 10ft wide (2.44m x 3.05m), but teams may use any additional space that Tournament officials designate as available. The 8ft x 10ft site will not be taped.
3. **Electrical Power:** A 3-prong electrical outlet will be provided at the edge of each Presentation Site for the team's use.

D. Reward Points

Scoring at a Glance



Putting It All Together



ELEMENT		POINTS	DETAIL
CENTRAL CHALLENGE		UP TO 240	A
1.	THE STORY	UP TO 90 POINTS	A.2
	a. Dramatic portrayal of the effect of the change on a character's life	Up to 20 points	A.2.a.ii
	b. Creative integration of research about Robotic Technology into the Story	Up to 20 points	A.2.b
	c. Creativity of the original Story	Up to 25 points	A.2.c
	d. Clear and effective presentation of the original Story	Up to 25 points	A.2.c
2.	DI-BOT	UP TO 110 POINTS	A.3
	a. Creative integration of DI-BOT into the Story	Up to 25 points	A.3.a
	b. New and/or unexpected methods used to change a prop or set piece into DI-BOT or a part of DI-BOT	Up to 20	A.3.a.iii
	c. Completion of team-defined motion or task	0 or 15	A.3.b
	d. Technical Design of DI-BOT	Up to 25 points	A.3.e
e. Technical Innovation of DI-BOT	Up to 25 points	A.3.e	
3.	SCENE-CHANGE TRANSITION	UP TO 40 POINTS	A.4
	a. Presentation of Scene-Change Transition	0 or 10	A.4.b
	b. New and/or unexpected methods used to produce the Scene-Change Transition	Up to 15 points	A.4.b
c. Effectiveness of the Scene-Change Transition	Up to 15 points	A.4.b	

SIDE TRIPS		UP TO 60	B
1.	SIDE TRIP 1	UP TO 30	B.3
	a. Creativity and Originality	Up to 15	B.3
	b. Quality, Workmanship, and/or Effort that is evident	Up to 15	B.3
2.	SIDE TRIP 2	UP TO 30	B.3
	a. Creativity and Originality	Up to 15	B.3
	b. Quality, Workmanship, and/or Effort that is evident	Up to 15	B.3

Tournament Data Form

Challenge B: DI[®]-BOT

Page 1 of 2

Team Name: _____

Team Number: _____ - _____ Level: EL ML SL UL

School/Organization: _____

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 fill this form out completely and neatly. For Elementary Level teams only: Team Managers MAY fill out the form, writing out the words dictated by the team.

PART ONE: Required Paperwork: At the Tournament Presentation Site, the Prep Area Appraiser will ask for your team's forms. A complete checklist of the required forms is below. None of the forms listed below can be used as a scoring item.

Your team needs:

_____ **Five copies** of this completed two-page *Tournament Data Form*. Be sure to copy both pages of this form. This is PAGE ONE of the form. Page Two may be copied onto the back of this sheet.

_____ **Two Copies** of the completed Declaration of Independence. Blank copies of this form can be found in the *Rules of the Road*. One copy of this form is for *Team Challenge*, the other copy of is for you to take to *Instant Challenge*.

_____ **One Copy** of the completed Expense Report. This form can be found in the *Rules of the Road*. Be sure to bring copies of your receipts in case you are asked for them, but it is not necessary to attach them to the form.

_____ **Team Identification Sign:** This will tell the Appraisers and the audience who you are. It must list your Team Name, Team Number, School/Organization (if different from Team Name), and Level. It cannot be scored. See the *Rules of the Road* for more information.

_____ **Published Clarifications:** We have read and are aware of the Published Clarifications on www.IDODI.org.

PART TWO: Brief Description of Side Trips

Side Trip 1 : What is your Side Trip? _____

Please write a brief Description of your *Side Trip*. Make sure that Appraisers know **exactly** what you want them to evaluate. What would you like them to know about the *Side Trip*?

Side Trip 2 : What is your Side Trip? _____

Please write a brief Description of your *Side Trip*. Make sure that Appraisers know **exactly** what you want them to evaluate. What would you like them to know about the *Side Trip*?
