

Destination ImagiNation®  
*Instant Challenge*

2005 Affiliate Competition – Advanced Level

# WHAT'S THE ANGLE?

**Challenge:** Your **TASK** is to build a “free-standing” tower that is as high as possible and that leans as far to one side as possible.

For the purpose of this Challenge, “free-standing” means the tower isn’t attached to anything.

**Time:** You will have up to 7 minutes to use your IMAGINATION to design and build your tower.

**Set-up:** In the center of the floor is a taped area. Next to the taped area is a wooden structure with a post that is standing upright. This post will be used to see how far your structure is leaning. There is also a table with materials that you may use to build your structure.

**Procedure:** (7 minutes): Use the materials on the table to build a free-standing tower within the taped area that is as high as possible. It is also important that your tower lean to one side as much as possible. You may support the structure in whatever way you want to, but the tower may only touch the floor inside the taped area. You will be warned when you have 1 minute remaining and 30 seconds remaining. **You must have a tower that only touches the floor within the taped square when time ends in order to be scored.** When time ends, an Appraiser will measure the height of the tower. The team then will move the wooden structure next to the tower on the side where they think the tower is leaning the most. When the structure is in place, an Appraiser will measure the angle between the upright post and the highest point of the tower that is next to the post. You may NOT touch the tower once time has ended.

## Materials:

5 Pencils	6 in (15 cm) Piece of Duct Tape	10 Craft Sticks	6 Coffee Stirrers
2 Index Cards	8 Paper Clips	10 Toothpicks	2 Straws

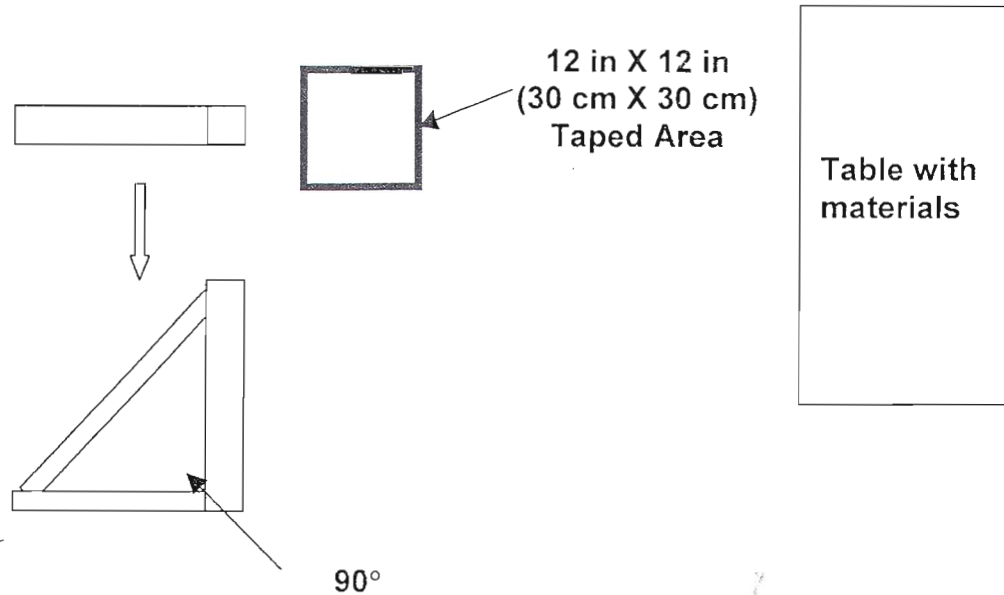
A protractor (angle measuring device) and ruler will be available for your team to use but may NOT be part of your tower.

**Scoring:** You will receive

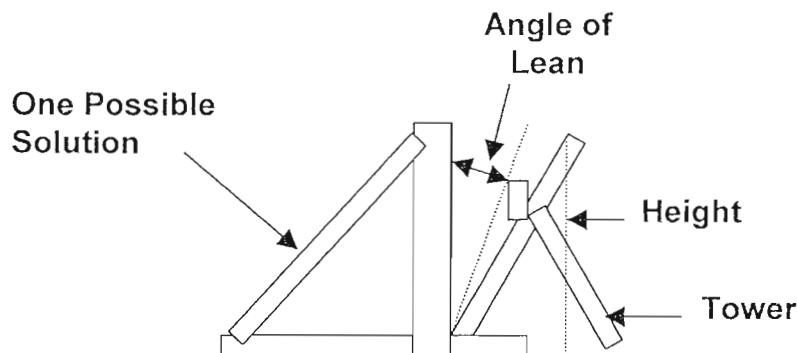
- A. 1 point (30 points maximum) for each inch (2.5 cm) of height of the tower.
- B. 5 points for each 10 degrees (40 points maximum) that your tower leans to one side.
- C. Up to 10 points for how creatively you attempt to solve the **TASK**.
- D. Up to 20 points for how well your team works together.

## For Appraisers Only:

1. The set-up consists of a 12 in X 12 in (30 cm X 30 cm) taped square in the middle of the room. Next to the taped square is a post that is on a base and standing upright. There is also a table with materials on one side of the room.



2. The height of the structure is measured as the perpendicular distance from the floor to the highest point on the tower. The angle of lean is measured by having the team move the post up to the side of the structure that they think has the greatest lean and measuring the angle from the post to the highest point of the tower next to the post. If the team touches the tower after time has ended or the tower collapses, no further measurements should be made.



3. The team should be warned when there is 1 minute remaining and when there is 30 seconds remaining. Each time an Appraiser should say, "**You must have a tower completely within the taped square when time ends in order to be scored.**"
4. The Appraising team should practice measuring angles before the first team competes.

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# WHAT'S THE ANGLE?

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**Set-up:** In the center of the floor is a taped area. Next to the taped area is a wooden structure with a post that is standing upright. This post will be used to see how far your structure is leaning. There is also a table with materials that you may use to build your structure.

**Procedure:** (7 minutes):

- Use the materials on the table to build a free-standing tower within the taped area that is as high as possible. It is also important that your tower lean to one side as much as possible.
- You may support the structure in whatever way you want to, but the tower may only touch the floor inside the taped area.
- You will be warned when you have 1 minute remaining and 30 seconds remaining.
- **You must have a tower that only touches the floor within the taped square when time ends in order to be scored.**
- When time ends, an Appraiser will measure the height of the tower. The team then will move the wooden structure next to the tower on the side where they think the tower is leaning the most. When the structure is in place, an Appraiser will measure the angle between the upright post and the highest point of the tower that is next to the post.
- You may **NOT** touch the tower once time has ended.

**Scoring:** You will receive

- A. 1 point (30 points maximum) for each inch (2.5 cm) of height of the tower.
- B. 5 points for each 10 degrees (40 points maximum) that your tower leans to one side.
- C. Up to 10 points for how creatively you attempt to solve the **TASK**.
- D. Up to 20 points for how well your team works together.

## WHAT'S THE ANGLE?

### **Materials:**

(Tape to Table)

5 Pencils

6 in (15 cm) Piece of Duct Tape

10 Craft Sticks

6 Coffee Stirrers

2 Index Cards

8 Paper Clips

10 Toothpicks

2 Straws

A protractor (angle measuring device) and ruler will be available for your team to use but may NOT be part of your tower.

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**WHAT'S THE ANGLE?**  
**APPRAISER RUBRICS**

**RUBRIC FOR APPRAISING HOW CREATIVELY THE TEAM ATTEMPTS TO SOLVE THE TASK**

Points	1 – 3	4 – 5	6 – 7	8 – 10
Qualities	<ul style="list-style-type: none"> <li>• Creativity is present and it's somewhat enhanced</li> <li>• The solution applies</li> </ul>	<ul style="list-style-type: none"> <li>• Creativity is present and it's relevant</li> <li>• The solution is complete</li> </ul>	<ul style="list-style-type: none"> <li>• Creativity is present and it's integrated</li> <li>• Chiefly original work</li> </ul>	<ul style="list-style-type: none"> <li>• Creativity is there and it's innovative</li> <li>• AHA! WOW!</li> </ul>

**RUBRIC FOR APPRAISING TEAMWORK**

Points	1 – 5	6 – 10	11 – 15	16 – 20
Qualities	<ul style="list-style-type: none"> <li>• Dominating individual who limits participation of others</li> <li>• Cooperation is minimal</li> <li>• Little sharing of ideas</li> </ul>	<ul style="list-style-type: none"> <li>• Some evidence of individual team member roles</li> <li>• Some cooperation</li> <li>• Some evidence of accepting ideas of others</li> </ul>	<ul style="list-style-type: none"> <li>• Acceptance of team roles above average</li> <li>• Good cooperation</li> <li>• Sharing and acceptance of ideas of others</li> </ul>	<ul style="list-style-type: none"> <li>• Leadership and team roles are easily identified</li> <li>• Diversity of skills mutually respected and evident</li> <li>• Team dynamics are exemplary</li> </ul>

# Destination ImagiNation®

Team Name: \_\_\_\_\_ Level: E M S U

Passport Number: \_\_\_\_\_ Team Challenge: \_\_\_\_\_

Appraiser's Name: \_\_\_\_\_

## WHAT'S THE ANGLE?

### INSTANT CHALLENGE INDIVIDUAL SCORE SHEET

Score Element	Range	Team Score
A. _____ # of inches (2.5 cm) in height of tower	_____ X 2 (30 Points Maximum)	
B. _____ # of degrees in lean of tower	0 → 10 Degrees = 0 >10 → 20 Degrees = 5 >20 → 30 Degrees = 10 >30 → 40 Degrees = 15 >40 → 50 Degrees = 20 >50 → 60 Degrees = 25 >60 → 70 Degrees = 30 >70 → 80 Degrees = 35 >80 → 90 Degrees = 40	
C. How creatively the team attempts to be solve the <b>TASK</b>	1 – 10	
D. Teamwork	1 – 20	
<b>Total</b>		

Note: Team score elements should be recorded in whole numbers. (No fractions or decimals.)

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Team Name: \_\_\_\_\_ Level: E M S U

Passport Number: \_\_\_\_\_ Team Challenge: \_\_\_\_\_

## WHAT'S THE ANGLE?

### INSTANT CHALLENGE MASTER SCORE SHEET

Appraiser's Name	Total Score
1.	
2.	
3.	
4.	
Add 1 + 2 + 3 + 4	E. _____
Divide E by # of Appraisers	F. _____

NOTE: The division in the final step should be carried out to 3 decimal places.

**INSTANT CHALLENGE SCORE**

G. \_\_\_\_\_

NOTE: Rewrite the final score in the box above. The final score should be rounded to 2 decimal points. Round up if the third decimal is 5 or more.