



TIPS & TRICKS FOR PRACTICING INSTANT CHALLENGES

Introduction:

There are literally hundreds of full and mini instant challenges available to team managers, as they guide their teams to more successful creative problem solving. But simply giving a couple of random instant challenges at each weeks practice will not build the necessary team problem solving skills, in DI competition or life in general. Instant challenges, whether task or performance based, require a team game plan. This document is designed to provide team managers some guidance as they help their team craft a solid game plan for tackling instant challenges.

LAWS: Teams need them:

Even though creativity can't be bound to a totally structured process, instant challenges require listening and time management skills. The following are musts for any instant challenge and therefore, team managers, with the team, should carefully critique each instant challenge that they undertake to see that these activities actually have taken place:

L – Listen carefully when the Challenge is read.

- What are the time limits? – teams should assign a time keeper
- Are there penalties for certain actions?
- Are there areas that can't be crossed or entered – foul lines?
- Listen for specific information – “Can't be touched by hands” is different than “Can't be touched”.
- Your Imagination (thinking) time really begins with the reading of the challenge.

A – Analyze

- All materials provided. What are their characteristics? (more on this later)
- Discuss various alternatives – use CPS tools (brainstorming, advantages/disadvantages etc.)
- **DON'T** alter any material until a final decision has been made.
- Think of a similar challenge you have practiced and apply what was learned.

W – Work Together

- Everyone must participate.
- Listen to other team members' ideas.
- Decide what is **best for the team**.

S – Successful Team

- Combine all of the above and this is the result. **REMEMBER** – there is almost always some points given for teamwork – good teams **ALWAYS** get these points even if their solution doesn't completely work.

Analysis of the Instant Challenge

- **Determine the Focus of the Challenge**
- **Analyze the Scoring Areas**
- **Analyze Materials Provided**
- **Time Management**
- **Teamwork**

Crafting a Game Plan:

1. Determining the Focus of the Challenge

This should ALWAYS be Step 1.

What is the Challenge?

What is the Team really supposed to be doing?

2. Analysis of Scoring Areas, including Rubrics

A Team should be taught to go immediately to this Step next.

Where are the points?

They should not spend time on areas where there are no points.

3. Analysis of Materials provided

A Team should first look at the Materials, BEFORE starting to work with them.

What Materials were they given?

How might we use CPS Tools to best utilize the Materials?

Can they be altered or not?

4. Time Management

A Team Member should always be assigned to "Time"

A Team should use x minute(s) for idea generation and x minutes for building and/or performing

5. Teamwork

Teamwork is always worth a minimum of 20 points - 20% of the total score.

- Teams need to practice **Sharing** ideas quickly, **Trust** in each other, **Accept** ideas of others, and **Respect** all ideas. That is the recipe for team to **STAR** at instant challenges.
- Teams need practice at developing:
 - Trust in each other
 - Sharing
 - Acceptance of ideas of others
 - Cooperation
 - Exemplary team dynamics
 - Respect for each other's ideas

Team Roles:

What roles will each team member have:

- a. **The Timekeeper** - keeps track of the time.
- b. **The Details & Rule person** – is responsible for listening for the details of the challenge and making sure the team knows what they should and should not do.
- c. **The Point person** - helps analyze the points.
- d. **Teamwork facilitator** - makes sure everyone has a chance to give ideas.
- e. **Laughmeter monitor**- makes sure that the skit or whatever is funny (if it is supposed to be).
- f. **Skit Developer** - works on the story line if there is one.
- g. **Builders** - works on the device or prop.
- h. **Performers** – performs skit.
- i. **Special Effect technicians** - cause the special effects, act as human scenery and props.

General tips for solving all instant challenges:

1. Speak loudly and clearly. If you can't be heard, it doesn't matter how creative your solution is.
2. Know where the points are. Listen carefully to where the largest number of points will be awarded and work from there.
3. Know your teammates and their strengths. Everyone has different areas in which they excel.
4. Listen to the instructions carefully. Ask questions if you're unclear about what is expected. There are no stupid questions; just speak up.
5. Time is very important. Although the team should take responsibility for keeping track of time, you may ask how much time is remaining.
6. The entire team should evaluate their performance, noting areas needing improvement. Then do the challenge again.
7. You will notice teamwork is a very important in instant challenges. Never argue with your teammates while trying to solve your challenges.

How to present Instant Challenges to your team

Keep copies of the Instant Challenge a safe place away from the team. The idea behind Instant Challenges is on-the-spot-problem-solving. If you allow any team member to read any of these challenges prior to the presentation to the entire team, it defeats the purpose of being able to think on their feet..

Preview the challenges for difficulty. Many challenges can be modified to fit different skill levels. To be successful with Instant Challenges, be sure to read each one carefully and assemble all required materials prior to presenting the challenge to the team. Materials may be substituted, but be sure to make the appropriate changes in the written text of the challenge. Be sure to set the challenge up in a place suitable to the challenge requirements. Performance-based challenges may need lots of room, and task based challenges usually need a table or workspace that can stand the punishment of a truly creative team. A quiet, well-lit room away from distractions, is preferable.

All challenges should be timed. Although, teams may not finish within the stated time

requirements, they should be stopped when the time has expired. Time management is an important skill, and consistent timing practices will increase the team's success.

Once the challenge has been set up and the materials are in place, the facilitator may introduce the team to the challenge. The facilitator should read the challenge as written, with no additional explanations. If possible, an additional written copy of the challenge should be available for the team to use at this time and throughout the challenge. The team may ask questions after the entire challenge has been read and time has started. Unless the facilitator is asked questions, they should not interfere with the solution in any way until time is called.

The facilitator should observe the team closely and score them in the areas required by the challenge. You should share observations and ask the team to evaluate themselves. Be prepared to help your team if they didn't understand the challenge. Talk about how your team could have improved their scores and what factors may have tripped them up. After a team has analyzed its solution, it is often helpful to ask them to solve the challenge again with a completely new solution. You can use the basic format to create more practice challenges using different materials.

Debriefing:

Ten Important Questions to ask after every *Instant Challenge* Activity:

Just providing an instant challenges to your team at weekly practice will not make the team good at them nor will it be an effective use of that important time. Team Managers need to debrief with the team after each challenge. Ask these questions and let the team evaluate themselves (Note – snack time is always appropriate after debriefing):

- How do you think you did as a TEAM? What did you learn about teamwork from doing this?
- How well did you manage your time? How might you have used your time more effectively?
- What were some strengths of your solution? What worked well?
- If you were to start the challenge over again, what might you do differently?
- Did your team use any CPS tools? If so, which ones? If not what ones might you have used?
- How well do you feel you used the materials you were given? How might you have used them differently? Were there materials you didn't use and if so how might have you used them?
- How well did you create your solution to fit the emphasis in the scoring? Would you do anything differently?
- If the solution did not work, what could you have done to make the solution work?
- Could your solution have been more creative, novel, or unique? What might you have done to make that happen?
- Finally, and most important: WHAT DID YOU LEARN?

Performance-Based *Instant Challenges* are written with the following sub-headings:

1. **Challenge:** A brief summary of the team's Challenge.
2. **Time:** A statement of how much time the team has for each part of the Challenge. Usually a team may ask to be scored early before time has been called.
3. **The Scene:** This section sets up the rules for the team's presentation before the Appraisers.
4. **Materials:** Items to use in your presentation usually will be separated into things that can be changed (or altered) and things that cannot be damaged.
5. **Scoring:** This section gives the details of how the team will be scored on the Challenge.

Types of Performance-Based *Instant Challenges*

a. Without Props:

- No props given or listed
- Scored entirely on what the team does with themselves

b. With Props:

- Props are provided
- Some emphasis may include creative use of props

c. Team-Created Props:

- Team is given basic supplies with which to make their props (i.e. paper, scissors, markers)
- Usually similar in other respects to the "with props" Challenges

d. Imaginary Props

- Team is given a list of props but not the actual props
- Team pantomimes the uses of the imaginary prop during the presentation

Preparing for Performance-Based *Instant Challenge* Presentation:

1. Speak loudly and clearly.
2. Listen to instructions carefully. Ask questions if the instructions are not clear.
3. Know where the points are in the Challenge.
4. Listen to your teammates when doing Improv. Relax and go with the flow!
5. Don't make unnecessary long speeches. Give everyone a chance to add to the solution.
6. Practice giving everyone a part. Making up a skit where team members play scenery sometimes demonstrates teamwork better than using only the strong performers.
7. Practice talking yourself out of a jam when your mind goes blank.
8. Practice saving a teammate who cannot think of a line or reaction.
9. Practice using exaggerated movements and expressions.
10. Make up your own Improv games that include different criteria for scoring.

Tools for Performance-Based IC's

CREATIVITY TOOLS	SCAMPER Categories Environments
<u>PRESENTATION TOOLS</u>	<p style="text-align: center;">Characterizations</p> <p>Mime</p> <p>Stage Presence</p> <p style="text-align: right;">Improv</p> <p style="text-align: right;">Body Language</p> <p style="text-align: right;">Voice Alteration</p>
Story Line Development	Beginning, Middle, End Characters, Situation, Setting
Manipulation of Materials	With Props Team Created Props Imaginary Props Creation of Props, Costumes, etc.
Other Theatrical Elements	Staging Music Special Effects
TEAMWORK	Cooperation, Sharing, Division of roles, Respect of others' ideas
PROPERTIES OF MATERIALS	(See Task-Based Instant Challenges)

Elements of Performance

1. Characterization:

- a. **Definition:** The personality a character displays. Done through the character's actions, choice of words, how he/she thinks, and how others react to this character.
- b. **Posture:** Are you showing the age, emotion, and energy of the character?
- c. **Gestures:** Are your gestures exaggerated? Are you acting or reacting to something?
- d. **Voice:** Are you displaying emotion, an accent, proper tone, age, mood, proper volume to be heard, and are you understandable?
- e. **Choice of Words:** Do your words fit your character? You would speak differently if you were a gentleman rather than a 3-year-old child.
- f. **Personality:** Are you an introvert or an extrovert? Do you like people? Are you active or quiet?
- g. **Body Movement:** Can others tell what you are doing? Are your body movements concise? Does your body movement reflect many of the attributes listed above?
- h. **Show of Emotion:** Are you happy, sad, angry, tired ? Does your face show what you are thinking and how you are reacting?

2. Stage Presence

- a. **Credibility:** Is your character believable?
- b. **Projection:** When you speak, can the audience hear you?
- c. **Position:** Are you stage front? Where is your back? Center Front – A good place for a performance versus in a back corner.
- d. **Speaking, Movement and Reaction:** Is the speaker moving in some way so the audience can tell he/she is speaking? Are the others still (unless movement is part of the story? Do the actors cross behind another person instead of crossing in front of them?
- e. **Audience Involvement:** When people speak, do they turn towards to audience? That way it appears as those the team is including the audience as an extra person.

3. Story Development

- a. **Beginning:** Initial Situation
Does the group give the details of the situation? Does the audience understand the situation? Is it clear and concise?
- b. **Middle:** Progression of story
Does the story flow and move forward? Does it include complication and suspense?
Are there situations, conflicts, or obstacles to overcome? Are the situation still clear to the audience?
- c. **End:** Conclusion - Resolution of Conflict - Ending
Is the conflict resolved? Does the story have a clear ending? Is the resolution clear to the audience?

4. Improvisation Skills

- a. **Consistency:** Do the objects that are mimed have definite size and shape so the audience will know what the team member is doing?
- b. **Exaggerated Resistance:** Is the resistance against an object, such as a door, or an action, such as sewing, exaggerated? Are their precise, concise, definite movements so the audience will know what the team member is doing?
- c. **Exaggerated Expression and Gestures:** Are the actors displaying emotions in an exaggerated manner so the audience knows what the team member is feeling?
- d. **Simple Story Lines:** Is the story simple without too many details?
An Exaggerated Conflict/Problem is very humorous/dramatic/sad – This is what makes Improv so much fun to watch.
- e. **Participating in a scene:** Are all actors acting or reacting to the action on stage?
- f. **Team effort:** Are all team members contributing to the story line? Are all team members helping a member get out of a “dialogue dead-end” or filling in if another member forgets his lines?

5. Props

- a. **Importance in Team Challenge:** Are props important in a *Team Challenge*? How important is the size of the prop? How many props are needed? Is the construction and the material important?
- b. **Importance in Performance-Based Instant Challenges:** Is it important for provided or imaginary props to be used in Performance-Based *Instant Challenges*? How should the props be used?
- c. **Importance in Task-Based Instant Challenges:** Is the manipulation of materials important in Task-Based *Instant Challenges*? How can teams use materials wisely?
- d. **Thinking tools:** How can SCAMPER help a Team make creative props? How might brainstorming and brainwriting help teams create unusual props?
- e. **Creative Props:** How can teams design creative props? (See Module 4: Creative Problem Solving Process).
- f. **Managing Time:** How can a team decide on prop usage when their Performance-Based *Instant Challenge* allows or requires the use of Props? How can the team learn to allocate their time for both generating the ideas and making the prop/costume during an *Instant Challenge*?

6. Music and/or Special Effects

- a. **Music:** Will the use of music improve our performance? Can one or more of the team members become a “musical background” during our *Instant Challenge*?
- b. **Special Effects:** How can sound effects be used to enhance a performance? How can special effects be used in an *Instant Challenge*?

Manipulation of Materials

- With Props
- Team-Created Props
- Imaginary Props

Props are a major part of Performance-Based IC's.

Taking a Prop apart - VERBALLY - works well also. A good example would be a telephone. What parts could you use separately to solve the Challenge - e.g. the buttons, the cord, the wires inside, the outside case, the holes in the case where the buttons go, etc. Ask for other ideas from the participants.

Sometimes the Team is given only blank sheets of paper, a scissors and markers. They are asked to create their own props. Have the participants discuss what ways they could use those materials.

And - what about Imaginary Props. A Team can be given a list of props, but be asked to just imagine that they are there. They are then asked to use those Imaginary Props and display their uses in their solution. Discuss with the participants what Presentation Skills would be useful in creating a good presentation.

Creation of Props, Costumes, etc.

When a Team gets a "With Props" Presentation-Based IC, they need to allocate their time between idea generation and prop/costume generation. Time Management is important here.

Other Theatrical Elements

- Staging
- Use of Music
- Special Effects

Staging

- A Team Member should not have his/her back to the audience
- Center-Front is an excellent place for action versus the back of the area
- Entering and Exiting should be done with emphasis
- If more than one person is involved in the scene - someone should be acting and the rest reacting
- The person speaking should be moving, the other's should be still (unless movement is part of the story)
- A person should start to move, just before he/she starts to speak. That will draw the audience's eyes to that person.
- Cross behind another person instead of crossing in front

Music, Sound, and Special Effects

These are all "attention getters." They help keep the audience interested in what the Team is doing.

Performance-Based IC Check List

1. **Read:** Read the Challenge.
2. **Determine:** What needs to be accomplished? What is the task? What is the goal, the end result?
3. **Discuss:** What is the team really supposed to be doing? How can the team best accomplish the goal? What is actually going to be Appraised? How can the team best accomplish their goal?
4. **Time Management:** Teams should decide how much time they want to spend in idea-generating, focusing on the selection of the solution, planning, constructing, preparing, and practicing.

5. **Teamwork:** How can the team work together to produce the best results? Is it beneficial for the team to divide into groups and attack the challenge in segments? Should team members work in pairs on the same task?
6. **CPS Tools:** How can the team effectively use the CPS Tools? Which idea generating tools are best for this challenge? Which focusing tools are best for this challenge?
7. **Presentation Tools:** How might the team portray the characters? How might the team use posture, gestures, facial expression, body movement, and choice of words to enhance their Presentation? How might the team develop the story line? How might Improv Skills add to the Performance? How might special effects be used?
8. **Materials:** How might the team use the materials provided in a unique way? How might the materials be combined, be made stronger, be taken apart, be put to other use, be helpful, be used in an original manner?

Performance Based Challenges - What Appraisers look For:

Team managers should be aware of what appraisers are looking for – in this way you might help your team research performance skills, or bring in local experts to assist the team in building these skills (don't cross the interference line for your Team Challenge though).

Presentation Tools:

- How might the team portray the characters?
- How might the team use posture, gestures, facial expression, body movement, and choice of words to enhance their Presentation?
- How might the team develop the story line?
- How might Improv Skills add to the Performance?
- How might special effects be used?

Materials:

- How might the team use the materials provided in a unique way?
- How might the materials be combined, be made stronger, be taken apart, be put to other use, be helpful, be used in an original manner?

How to Improve Performance Based Skills

Teams: (steps to stronger Performance Skills)

1. Watch performances.
2. Discuss WHAT the actors did, HOW they sounded, HOW they moved.
3. Discuss what specific techniques your team members can develop to make their own performance skills better.
4. Practice those skills.
5. Debrief:
 - In what ways were you better than the last time?
 - How did you sound?
 - Did your performance make sense?
 - Were you convincing?
 - Are you characters “believable?”
 - How did you sound?
 - How did you move?
 - Were the items for points clear?
 - In what ways might you improve?
 - In what ways might you improve your overall performance?
6. Practice, Practice, PRACTICE some more.

Creative Uses of Materials:

It is important for team members and Appraisers to learn to use materials creatively in **BOTH** performance and task based challenges. Creativity involves using items in unique, novel, and different ways. By applying thinking tools while experimenting with materials, team members and Appraisers can discover many ways to make materials work.

The rubric below can help team members and Appraisers evaluate the creative uses of materials.

Needs Improvement	Fair	Good	Great
Materials used in a common ways	Some materials used in different ways	Many materials used in varied ways	Most materials used in varied ways
No materials combined to make new items	Few materials combined uniquely	Many materials combined in a variety of ways	Unusual combinations of materials to create new items
Usual materials integrated into presentation	Some materials integrated in a different way	Several materials integrated in novel ways	Many materials cleverly integrated into presentation, creating unique, original ideas enhancing the presentation

Task Based Instant Challenges – Making Materials Work

It is very important that teams understand the properties of common materials that they will encounter in task-based challenges. Remember, materials can have multiple properties, for example a straw can be both an extender and a connector depending on how it is used. Try the following activity below with your team.

Activity: It's All Material

This activity provides reinforcement of recognizing a material's original design and its alternative uses. Give the team:

- Plastic Straw
 - Paper Clip
 - Label
 - Toothpick
 - Index Card
 - Newspaper
 - Envelope
 - Clay
 - Toilet Paper Tube
 - Piece of paper
- Piece of notebook paper
- Ask participants to set up a table like the example below. Then have them list the items on the piece of notebook paper.
- Choose one design function - Extenders, Connectors, or Controllers.
 - Ask the team to determine if the various items fit into the chosen design function as original design or alternative use.
 - The team should record its responses on the notebook paper, beside each item listed.
- When finished, ask the team to report its findings.

Example:

Extender		
Item	Original Function (Yes or No)	Alternative Use
Wire Coat Hanger	No	Extender: unwind, cut, open to straighten

Debrief:

Discuss how each item has an original design and many alternative uses. One way creative uses of materials can be achieved is to implement alternative uses.

See **Task Based Practice Ideas** (page 10) for additional ideas for teaching a properties of materials list, suggested mini challenges to teach the properties of materials, and a list of basic instant challenge supplies.

Types of Task-Based *Instant Challenges*

- **To Communicate**

To communicate a task from one person to another, without speaking

You need to again ask yourself - What is your Challenge?

It is to communicate "something".

If the Team builds a Communication System to help them, they will be able to communicate whatever they need. The system may need to be visual or auditory depending on whether the senders and receivers can see each other or not.

A Team should practice communicating different types of "somethings"

- Colors
- Locations (Columns, rows, direction - remember the receiver is a mirror of the sender)
- Sizes
- Which person is to do something

They can make up little mini Challenges asking them to communicate different sets of information.

- **To Build**

To Build Challenges usually build up (and possibly hold weight), out, and as long as possible.

To Build Challenges respond well to both SCAMPER and Properties of Materials CPS Tools.

A team should try different mini Challenges

- Build a tower as tall as possible
- Build a bridge across a 12" span
- Build an object as long as possible

The Team can do each one several times, just by picking out different Extenders, Connectors, and Controllers

Understand the principles of construction - Triangles, Circles, base of support.

- **To Move**

To Move Challenges involve "moving something" from one place to another.

It could be a ball, a piece of paper, anything.

Teams may have to move items for accuracy, distance, speed, more than one direction, or retrieve items, or through an obstacle course.

To Move Challenges respond well to both SCAMPER and Properties of Materials CPS Tools.

- **To Protect**

To Protect Challenges involve protecting something - an egg, a ping pong ball, a structure, etc.

To Protect Challenges respond well to both SCAMPER and Properties of Materials CPS Tools.

- **To Change**

To Change Challenges involve changing something into something else, using given materials.

To Change Challenges respond well to both SCAMPER and Properties of Materials CPS Tools.

Task-Based IC Check List

1. **Read:** Read the Challenge
2. **Determine:** What needs to be accomplished? What is the task? What is the goal, the end result?
3. **Discuss:** What is the team really supposed to be doing? How can the team best accomplish the goal? What is actually going to be Appraised? How can the team best accomplish their goal?
4. **Time Management:** Teams should decide how much time they want to spend in idea-generating, focusing on the selection of the solution, planning, constructing, preparing, and practicing. Break down the challenge into components. Keep an eye on the clock and budget your time. Examine the materials available. Discuss: What do we have to work with? Is it better to do this first? Does dividing the tasks seem more productive? Should we have a team captain to manage the solution?
5. **Teamwork:** How can the team work together to produce the best results? Is it beneficial for the team to divide into groups and attack the challenge in segments? Should team members work in pairs on the same task? Develop a team strategy before even beginning to work on the solution. Don't forget to think about various alternatives in case the solution isn't working. Don't have greedy behavior.
6. **CPS Tools:** How can the team effectively use the CPS Tools? Which idea generating tools are best for this challenge? Which focusing tools are best for this challenge?
7. **Presentation Tools:** Are Presentation Tools needed in this Task-Based Challenge? Would a Presentation enhance the solution? If so, how might the team portray the characters? How might the team use posture, gestures, facial expression, body movement, and choice of words to enhance their Presentation? How might the team develop the story line? How might Improv Skills add to the Performance? How might special effects be used?
8. **Materials:** How might the team use the materials provided in a unique way? How might the materials be combined, be made stronger, be taken apart, be put to other use, be helpful, be used in an original manner?
- 9) **Limitations and Things to Consider:**
 - Foul line
 - Is there anyone allowed to cross
 - Can use scissors in solution (or cannot)
 - Can use envelope materials are in (or not)
 - Number of items each team member is allowed to use
 - Can you touch the item being moved or do you have to have one of the materials in-between
 - Is there more than one part in the solution phase i.e. Build a tower as high as you can and then place a bucket on it and place as many nails as you can into the bucket.
- 10). **Scoring:** What parts of the solution may receive more points.
 - Where are the points:
 - i.e. On just the building of item
 - Or also on the weight it will hold
 - i.e. On just getting the ping pong balls there
 - Or also more points on a certain color
 - anticipate specific points such as:
 - What When Who Why How
 - How many How much How often

Types of Combination *Instant Challenges*

- **Combinations**

Any combination of Task-Based and Performance-Based *Instant Challenges*

Examples:

Build _____ and then present a marketing program for it

Move _____ and develop a performance about it

Build _____ and give it a name

And any other combination you can think of.

SUPPLY LIST FOR TASK BASED CHALLENGES

Office Type Supplies

Paper clips (large & small)
Manila envelopes
Wooden Pencils
(unsharpened)
Rubber bands
8.5" x 11" folders
8.5" x 11" sheets of paper
White and various colors
Business envelopes
Adhesive mailing labels
Self-adhesive labels
Ball point pens
Markers (black & colors)
Colored paper clips
Index cards
Scotch tape

Craft Type Supplies

Pipe cleaners
Yarn (various colors)
Popsicle sticks
Ribbon - various colors
Sticks of clay
Balloons

General Supplies/Tools

Masking tape
Duct tape
Adhesive tape
Scissors
Paring knife
Screw driver
String
Pliers

Other Supplies

Ping pong balls (white & color)
Golf tees
Tennis balls
1/2" Dowel - 3'
Yard stick
Foot ruler
Molding strips - 3'
Marbles
Straws (without a bend)
Rubber balls
Cotton balls

Grocery Store Type Supplies

Dry Spaghetti
Shaped pasta (wheels, etc.)
Marshmallows (large & small)
Gum drops
Styrofoam cups
Paper plates
Toothpicks (round & flat)
Brown paper lunch bags
Baggies (Pint & Quart sizes)
Coffee stirrers
Aluminum foil
Waxed paper

Miscellaneous Supplies

Boxes of various sizes
Egg cartons (different colors)
Coffee cans
Cardboard
Paper towel tubes
Toilet paper tubes
Buckets
Margarine tubs
Packing foam
Styrofoam peanuts
Noise markers (bell, keys, etc.)

Properties of Materials

Task-Based Instant Challenges on Properties of Materials

Examples of: Types of Materials

Extenders:

Yard sticks	Rulers	Dowels
Pencils	Etc.'	

Connectors/Adhesives:

Rubber bands	Paper clips	Envelope glue
Mailing labels	Gum drops	Marshmallows
Clay	Pipe cleaners	Tape (all types) 5 9
Pasta	Tooth picks	Tubes
String	Yam	Etc.

Transporting:

Balloons	Piece of paper	Envelopes
Piece of cardboard	Cups	Plates
Bags	Aluminum foil	Cotton balls
Tubes	Ball bearings	Marbles '
Spoons	Straws	Etc.

Structural items:

Pipe cleaners	Paper	Envelopes
Cardboard	Pencils	Straws
Rulers	Yard sticks	Index cards
Dowels	Paper clips	Spaghetti
Styrofoam cups	Paper plates	Etc.

HOLDERS:

Paper cups	Tooth picks	Lunch bags
Envelopes	Styrofoam cups	Paper plates
Etc.		

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Task Based Instant Challenge Practice Ideas

Use the following set of supplies for each of these Task-based practice ideas. For each problem, begin with 5 team members "sitting on their hands" until they are ready to begin problem solving. Every item touched must be used in solving the problem. so the team must begin with a discussion prior to problem-solution. Discussion is part of the time allowed

Supplies: 100 straws, 100 paper clips, toothpicks, paper towels, envelopes, pieces of paper, toilet paper tubes, and masking tape.

Problem One: With the materials on the table in front of you, make 50 straws "stand up" using only two kinds of items. Time: 5 minutes.

Possible answer: Paper clips bent at 90 angles inserted into straws helps them stand

Problem Two: Make a bridge to span the space between two chairs or tables that will hold 100 paper clips. Use only three of the items. Time: 8 minutes.

*Possible answer: Fold paper up along both sides and tape to surfaces
Folding peer adds surprising strength!*

Problem Three: Make the tallest house you can using two of the items. Time: 10 minutes.

Hint: Triangles support more weight than squares

Problem Four. Move a book across a table using toilet paper tubes. Time: 2 minutes.

Possible answer: Place book on tubes and roll them across table.

Problem Five: Make the five pieces of paper stand up at least 3" tall using two of the items. Time: 5 minutes.

Possible answer: Fold paper into thirds and clip closed

Use paper clips bent at 90 ° angles to insert into opening on

Problem Six: Make a creative, wide hat using all of the items that fits on two people at the same time. Time: 10 minutes.

Hint: This is messy and has no real answer!

Problem Seven: Using straws for a surface, make a structure that will hold as much weight as possible.

Hint: Make a "raft" with straws, tape, & toothpick

Problem Eight: Using only the paper and tape, make a stand to hold a book at least 4 inches off the table horizontally. Time: 8 minutes.

Possible answer: roll paper into pillars and tape. Stand four pillars in the four corners of the space the book will take and lay book on pillars It works!

Problem Nine: Make a model of a possible presentation-backdrop that would allow for changes of scenery. Time: 15 minutes. (Use any/all items.)

Hint: Watch a ,D I video and observe different approaches to backdrops that allow a change of scenery. Try to construct models of some

Managing Tips - Task-Based Instant Challenge

Teach Properties of Materials

Introduce one type of challenge at a time

Let them fail, analyze, and try again

Let them solve it - NOT the Team Manager

Make sure they understand the principles of the challenge

Expand complexity of challenge as they go along

Basic Task-Based Managing Tips:

Read a task-based challenge to the team

Instruct team to listen carefully

Have them redefine or reword the challenge as necessary

The Team should understand the goal and begin to form a strategy

Limit discussion to minimize confusion

Important component of team strategy is specialization

Have team designate and match tasks to individuals

Key person is the decision maker

Team Captain listens to suggested solutions and decides on one idea as the solution and a second one as a backup

Team should assign:

A timer

Should warn team as time limit nears

Assemblers

Responsible for physical challenge construction

Parts and Materials Persons

Responsible for any cutting stapling, gluing
and handling needed by the assemblers

Mini Teams:

2,2,2 and 1

4 and 3

5 and 2

Have them:

Prioritize information as they listen

Agree on the goal

Agree on the most appropriate strategy

such as how much time can be spent discussing the challenge or testing solution

The idea is to have a definite plan, approach or method to solve the challenge

The most CRITICAL ABILITY is that team members must recognize a good solution when they think of one

Set up a hand-on challenge and include all necessary materials

Repeat solving this one challenge until the team agrees on the best solution.

Analyze what happened. what worked and why.

Video tape their solutions for review

Train them to have a second answer ready. Written by Rosemary Bognar

Appraising Team Work

When observing team work, the following elements become evident:

1. Cooperative Spirit:
 - positive attitudes and reinforcement of all team members
 - absence of negativism
2. Team Identified Roles:
 - tasks may be divided equally among the team
 - a leader's role is identified immediately or at some point in time
 - roles may have been pre-assigned prior to arrival at challenge site
3. Acceptance of Ideas of Others
 - sharing of ideas
 - acceptance of ideas of others
4. Diversity of Ideas
 - numerous ideas
 - ideas discarded and implemented
5. Ability to work through disagreements in constructive rather than destructive manner.
6. Ability to work on solution together utilizing the combined skills of all team members.
7. Ability to come to a consensus for the purpose of solving a challenge.

Score Range

Low - Dominating individual who limits participation of others
- Cooperation is minimal
- Little sharing of ideas

Med/Low - Some evidence of individual team member roles
- Some cooperation
- Some evidence of accepting ideas of others

Med/High - Acceptance of team roles above average
- Good cooperation
- Sharing and acceptance of ideas of others

High - Leadership and team roles are easily identified
- Diversity of skills mutually respected and evident
- Team dynamics are exemplary

Resources for Instant Challenges

1) Various Affiliate DI websites, e.g.:

- <http://cre8iowa-iclibrary.blogspot.com/>
- <http://mysite.verizon.net/vze2z83j/ic/>
- <http://www.angelfire.com/wi/thinkingcaps/Aframe.html>
- <http://www.extremecreativity.org/instant-challenge>