

## IDENTIFYING AND COLLECTING ITEMS TO UPCYCLE (for Camp Invention and Invention Project)

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**See the following page for a complete list of acceptable and unacceptable Upcyclable items**

Help us allow your child's imagination run wild throughout the program by collecting upcyclable materials for your child to use and share. These items are very important for this week of camp, as they help children design their prototypes. Please refer to list below when determining whether an item is acceptable or unacceptable.

**IMPORTANT:** Please thoroughly wash out all bottles, containers, foam trays and any other items as needed.

## SELECTING AND PREPARING YOUR CHILD'S TAKE APART ITEM (for Camp Invention only)

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**See the following page for a complete list of acceptable and unacceptable Take Apart items**

### Tinkering is Exploring!

At Camp Invention, we want children to explore the world around them. What better way than opening up everyday items to see what's inside? How do things work? What makes things tick? Turning a screw to reveal hidden mechanisms could be a child's first realization that everything we see has hidden layers!

Over the last 25 years, Camp Invention has been featuring hands-on, reverse engineering activities for children. It's been one of the most enriching and entertaining portions of our programs. Children are asked to bring a used/broken appliance item from home so they can tinker and explore!

They will be instructed in the safe use of hand tools and then guided through the Take Apart portion, where they disassemble the appliance. In teams, the children will begin the process of creating a new invention prototype using the parts from within the item.

Why do we feel the freedom to reverse engineer is important? Research of our world's greatest innovators showed a commonality that as children, they all took apart household items, re-imagining them into new prototype concepts! Our Collegiate Inventors Competition finalists, NeoVent, used a yogurt container and duct tape to create their prototype which later became a lifesaving infant respirator used in third world countries.

In preparation for the program, help your child to acquire a broken or unusable household appliance or other mechanical device for him or her to take apart during the Take Apart module. Also, you can visit local second hand stores to find Take Apart items to bring to camp. Please refer to the items below when determining whether the appliance is appropriate. During the Take Apart module, children will work in teams to brainstorm and create.

**It is extremely important that you prepare your child's Take Apart item by loosening any screws or components prior to the week of the program.**

Carefully unplug and cut all electrical cords and place the item in a bag clearly labeled with your child's name. Be sure to remove all other components that may potentially cause harm, including glass, blades or heating components. This will not only provide for an additional degree of safety but will allow your child more time to have fun investigating their Take Apart's inner gears and gadgets. Sending your child with safety gloves is allowed and encouraged! Please be sure that if you send safety gloves with your child that you label them with your child's name so they can be returned at the end of the program

**IMPORTANT:** Please be advised that the Take Apart item you provide will not be returned to you in working condition. Children will work in groups to disassemble their items to be used in a group project.

## UPCYCLABLE ITEMS (for Camp Invention and Invention Project)

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### Some Acceptable Items:

- Beads, buttons and craft supplies
- Boxes (shoe, cereal, etc.)
- Bubble wrap
- Building blocks
- CDs
- Containers/lids
- Fabric
- Film canisters
- Foam trays
- Game parts
- Miscellaneous paper (magazines, newspaper, kraft, etc.)
- Milk/OJ cartons/jugs (rinsed)
- Oatmeal canisters
- Paper towel tubes
- Pinwheels
- Plastic bottle caps
- Pulleys
- Rubber bands
- Springs
- Sporting goods and balls (no golf clubs or bats)
- Strainers
- String
- Washers

### Unacceptable Items:

- Batteries
- Cords
- Glass
- Glitter
- Liquids
- Medicine containers
- Packing peanuts
- Paint
- Prescription bottles
- Soda pop cans
- Wire hanger

## TAKE APART ITEMS (for Camp Invention only)

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*For your child's safety, please be sure your child's Take Apart item is a comfortable size for them to handle.*

### We have found that some of the best Acceptable Items for Take Apart include:

- CD Players
- Corded Telephones
- DVD Players
- Tape Players
- VCRs
- Wind-up Clocks

### Other Acceptable Items include, but are not limited to:

- Alarm Clocks
- Blu-Ray® players
- Boom Boxes
- Bread Machines
- Calculators
- Candy Dispensers
- Cash Registers
- Computer Keyboards
- Child's Powered Ride-on Cars
- Coffee Machines
- Fans
- Karaoke Machines
- Label Makers
- Piano keyboards
- Record players
- Typewriters
- Sewing Machines (no needles)
- Self-Rewinding VHS Machines
- Soundboards
- Stereo Speakers
- Radios

### Unacceptable Items:

- Cameras
- Cell Phones
- Irons
- Laptop Computers
- Microwaves
- Monitors
- Printers
- Rotary Phones
- Televisions
- Toasters
- Vacuums
- Video Game Consoles

*For safety purposes, your child's Take Apart item will be screened by a team member for acceptance prior to the program's start. If you have any questions as to whether an item is acceptable either as a Take Apart or as an item to upcycle, please call the National Inventors Hall of Fame home office at 800.968.4332. The National Inventors Hall of Fame is not responsible for lost or stolen goods.*