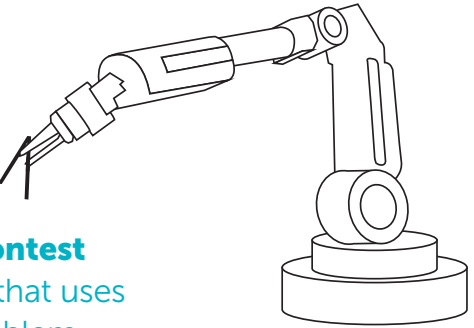


**ENTRIES
DUE
January 11,
2019**

CONTEST ENTRY FORM



Enter the **Innovators of Tomorrow Contest** by describing and sketching an invention that uses advanced manufacturing to solve a problem.



Five winning students will receive **one tablet** each. Each winning student's teacher will receive a **\$1,000 grant** for classroom use.

HOW TO ENTER

- Develop your contest entry (three sheets total).
- Submit your entry at scholastic.com/arconicfoundation/contest or mail to

Scholastic Inc.
SNP Innovators of Tomorrow Contest
557 Broadway
New York, NY 10012

SHEET **1**

This Entry Form

Complete all the contact information at right.

SHEET **2**

Overview Page

Explain how your invention addresses a current real-world problem. Briefly describe the materials, manufacturing process, and your business thinking.

SHEET **3**

Sketch Page

Draw (by hand or digitally) a diagram of your invention with labels describing your invention's features.

CONTACT INFORMATION

Student's Name _____

Grade _____

Teacher's Name _____

Teacher's Email Address _____

School Phone _____

School Name _____

School Street Address _____

City _____

State _____

Zip Code _____

JUDGING CRITERIA

The following criteria will be weighted equally to evaluate entries: a) How well you describe your invention and how it addresses a problem; b) how well you explain how your innovation was produced with an appropriate manufacturing process or material; and c) creativity and originality.

Use the Contest Entry Planner as a step-by-step guide.

NO PURCHASE NECESSARY TO ENTER OR WIN. Void where prohibited. Open only to students in grades 9–11 in a public school, an accredited private school, or a home school in the 50 United States (or the District of Columbia) which is in compliance with the laws and regulations of its state/district and who are residents of the United States. Students' teachers may also submit entries on their students' behalf both online or by mail, if the teacher is 18+ and a teacher at the student's school. To enter, an eligible student must go to scholastic.com/arconicfoundation/contest to complete the online entry form, as well as create and upload a written description and sketch of an innovation that uses advanced manufacturing; or complete entries can be submitted through the mail. Deadline: submitted or postmarked between 12:01 a.m. ET on October 1, 2018, and 11:59 p.m. ET on January 11, 2019 (mail-in entries must be received by 1/23/19). Prize: Five (5) winning students will receive one tablet (ARV: \$79.99). Each winning student's teacher will receive a \$1,000 grant for classroom use (five grants in total). See [Official Rules](#). Photos courtesy of Arconic Inc., used with permission.



CONTEST ENTRY PLANNER

Use these prompts to brainstorm and develop a successful entry for the **Innovators of Tomorrow Contest**.

Be creative! It's okay if your innovation won't actually work in real life (yet!), but it should solve a real-life problem. Is it a superflexible material for fighter suits with a chemical structure that resists melting? A sneaker sole that never wears out? Or a super 3D printer that can print cells at the molecular level and keep blood banks stocked? Whatever your idea, **think big!**

1 Brainstorm a few problems you'd like to solve with advanced manufacturing. Consider:

- What obstacles are people facing? Some thought starters:
 - Commuter traffic
 - Environmental sustainability
 - High-quality prosthetic limbs
 - Keeping food fresh and/or eliminating hunger
 - Life-threatening diseases
- What tasks are dangerous, difficult, or time-consuming for humans?
 - Is the challenge the location?
 - Examples: Extreme pressure in oceans or zero gravity in space
 - Is the challenge the task?
 - Examples: Medical procedures, construction, or even repetitive household tasks

2 Think about how you might use advanced manufacturing to solve the problems you identified. Then, choose one problem and solution to develop further.

- What is your innovation (a machine? a robot? a new material?) and how does it solve your problem?

3 Refine your innovation. What functionality will be required? Will it need to:

- Make decisions (artificial intelligence)?
- Be flexible, durable, waterproof, or elastic, or have a protective exterior?
- Be mobile, portable, or wearable?

Examples of real-life technologies:

Advanced Material	Properties
Carbon fiber reinforced polymer	Extremely strong and light type of flexible plastic
Metal foam	Extremely strong and light metal; absorbs impact; fireproof
Advanced thermal coating	Allows metal to resist melting

Advanced Process	Description
Additive manufacturing (3D printing)	Lays down superthin layers of material until a 3D object is created
Factory robots	Can autonomously perform challenging manufacturing tasks
Supercritical drying	Transforms a substance's liquid into gas to produce strong, ultralight aerogels

4 What materials or combination of materials will you need to create your invention?

- Do existing advanced materials and processes fulfill these requirements, or do you need to invent a new one?

5 What do you need to consider from a business perspective?

- **Audience** Who will buy or use your invention? (i.e., government, factory, consumers, etc.)
- **Price estimate** (research and consider the cost of materials, process, and labor)
- **Business thinking: After research, explain one of the following:**
 - When comparing the audience (how much funds they have) to the price (how expensive your invention is), do you need to adjust the audience or the price?
 - How did a cost-benefit analysis lead you to choose between a superstrong, more expensive material or a moderately strong, cheaper material?

Note Don't submit this planner sheet as part of your contest entry. Only submit the entry form along with your entry on separate sheets.

