

# What a mess!

Messes can be small like sticky fingers or huge such as plastic pollution in the ocean. Invent something to handle the problem.

**JANUARY**  
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# Inventerprise <sup>20</sup><sub>21</sub>

**Lonza**

# Welcome to Invention Enterprise 2020/2021

Here's the challenge:

**What a mess! Messes can be small like sticky fingers or huge such as plastic pollution in the ocean. Are you tired of seeing all these messes, tired of cleaning them up, or just wish they never happened in the first place? Invent something to handle the problem.**

**Here are some ideas to help you get started**

<b>Water</b>	People around the world have made a mess of our drinking water and oceans. How can we speed up the clean up? Or keep it from getting worse?
<b>School/Work</b>	Clean your desk! Cleanliness in your school/work area is more important than ever. What is your idea to keep you healthy and more productive?
<b>Health</b>	Some messes cause disease and public health is at the center of our world these days. Do you have any new ideas to keep us safe and healthy?
<b>Communication</b>	Reliable information is critical to prevent messes from getting out of control.
<b>At Home</b>	Legos scattered across the floor, muddy paw prints on the carpet, and sticky fingers after indulging on a popsicle. How will you keep your home clean?
<b>Minimalization</b>	Maybe a fantastic new multi-use object will allow us to do more with less clutter?
<b>Traffic</b>	Ever feel like traffic jams are one big mess? What's your solution to fix it?
<b>Weather</b>	Sometimes weather makes a mess. Think downed trees, flooding, damaged buildings. What is your idea for prevention or cleanup?
<b>Clean Air</b>	Air pollution is its own form of mess in the air. What do we do about it?
<b>Waste</b>	Abandoned trash is becoming more of an issue and recycling is great but creates piles of stuff that must be dealt with. Is there a better way?

For more information, go to our website at <https://or-inventionenterprise.zfairs.com>

## Official Rules

- (1) Any Central Oregon student in Grades K-12 may enter. Students may enter as individuals or in groups of up to three students but each student can only submit one entry.
- (2) While all entries will be submitted electronically this year, we encourage the use of creative formats which can be photographed or video recorded for submission. Examples are drawings, dioramas, models, movies, posters and reports. Use whatever medium best conveys your ideas. Video entries should be no more than 3 minutes in length.
- (3) Projects will be accepted until January 26, 2021. Visit [or-inventerprise.zfairs.com](https://or-inventerprise.zfairs.com) to submit your entry.
- (4) Parents and teachers may be consulted, but don't let grown-ups do your work or talk you out of your great ideas.
- (5) A panel of scientists and educators will judge entries for **relevance to the topic, creativity, originality, coolness, and how well ideas are developed! Judges love clear explanations.** Include your explanation in the project description, as an image and/or as part of video.
- (6) Please make sure that entries are original; remember that judges have access to the internet.
- (7) **Entries must not defy the laws of nature.**
- (8) Specially designed T-shirts will be awarded to the top entrants and all participants will receive a certificate recognizing their efforts.
- (9) Up to **\$2,000 in cash** will be split among students submitting the best **high-school entries**. The student submitting the best **middle-school entry** will choose between a **GoPro® camera, Apple watch, mountain bike, 3D printer, or inflatable paddle board.**
- (10) **Teachers in Grades K-5** will share \$2,000 in gift certificates for classroom supplies or books if more than half the students in their class participate in the contest (see website for details.)
- (11) Winners will be announced on the website no later than February 5, 2021. Winner's names and schools will be published publicly unless we are given notice with the entry to keep this information private.

For more information, go to our website at <https://or-inventerprise.zfairs.com>

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## Real Inventions to Solve Messes

The “Dustbuster” by Black and Decker was introduced in 1979 as a portable cordless handheld vacuum cleaner. It’s origin was a low power-consuming drill motor to be used in sample collecting on the moon. An early (1974) version of the vacuum targeted to the workshop was not successful, but the 1979 re-design that targeted kitchen cleanup was a hit, selling over 100 million units. <sup>1</sup>

Paper towels were designed in the early 1900s by the Scott paper company as an alternative to rolls of cloth for improved hygiene over re-usable towels. American consumers spent more than 5 billion dollars in 2017 on these disposable mess cleaners. <sup>2</sup>

Lack of communication can cause panic and confusion – what a mess! FEMA designed a system to quickly communicate with the public in the event of a national emergency. Messages can reach Americans all over the country within 10 minutes. <sup>3</sup>

Russian chemist Dimitry Mendeleev organized the world's knowledge of the basic elements of matter into a table of rows and columns, known today as the Periodic Table. Elements are listed by increasing atomic number. The beauty of this simplification is that characteristics of relatively unknown elements can be predicted by how they line up in the table. <sup>4</sup>

Collaboration between the Federal Communications Commission (FCC) and the American Telephone and Telegraph Company (AT&T) resulted in the emergency phone number 911 being set up nationwide in 1968. Prior to this, emergency numbers varied from place to place. What a mess! <sup>5</sup>

2300 years ago, the citizens of Athens, Greece piped stormwater and human waste to a storage basin outside of town. Rome also built sewers around this time, to carry away human waste that was regularly washed from the streets. The Roman aqueducts provided sufficient water to allow frequent street flushing. <sup>6</sup>

Through most of the 19th century, city sewers in the US drained into nearby rivers and lakes. It wasn't until the late 19th and early 20th century that cities in the US and UK began to construct treatment facilities to clean up the wastewater before discharging into the environment. Thanks for that! <sup>7</sup>

Joe Jones first came up with the idea for a floor cleaning robot as a student participating in the MIT 'Robot Olympics' in 1989. His company, IRobot, launched the first commercial model 13 years later and the Roomba was born. <sup>8</sup>

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<sup>1</sup> <http://www.idsa.org/dustbuster-1979>, <https://www.nasa.gov/offices/oct/40-years-of-nasa-spinoff/dustbuster>

<sup>2</sup> [http://fcs.tamu.edu/money/your\\_money/cdm/2001\\_2002/paper\\_towels\\_01\\_02.pdf](http://fcs.tamu.edu/money/your_money/cdm/2001_2002/paper_towels_01_02.pdf), <https://www.theatlantic.com/family/archive/2018/12/paper-towels-us-use-consume/577672/>

<sup>3</sup> <https://www.fema.gov/emergency-managers/practitioners/integrated-public-alert-warning-system/public/emergency-alert-system>

<sup>4</sup> <https://www.scientificamerican.com/article/the-evolution-of-the-periodic-system/>

<sup>5</sup> <https://www.nena.org/page/911overviewfacts>

<sup>6</sup> <http://www.sewerhistory.org/time-lines/tracking-down-the-roots-of-our-sanitary-sewers/>

<sup>7</sup> <https://www.britannica.com/technology/wastewater-treatment/Sources-of-water-pollution>

<sup>8</sup> <https://www.news-leader.com/story/news/business/2017/06/09/inventor-roomba-southwest-missouri-native-release-new-robot/371868001/>