Week 1:

- **Introduce the Challenge and Generate Excitement**
  Ask students if they have ever seen their parents or friends frustrated by a nagging problem or inconvenience. Imagine how friends and family would react if they solved that problem! Problems are solved constantly by scientists. The scientists at 3M solve problems by creating products that improve lives, enhance homes, and inspire tomorrow. Tell students that, if they use science to solve a problem for others, they could become a science celebrity and improve people's lives! And that is what the 3M Young Scientist Challenge is all about: students in grades 5 - 8 are invited to create a one to two-minute video describing a new, innovative solution that could solve an everyday problem.

  Share with students the top ten reasons to participate and the prizes.

  Note: Students may not enter the Challenge as a group. It is a contest for individuals.

- **Parental Consent and Registration**
  Before beginning the 3M Young Scientist Challenge, parents must give permission for their child to participate. Inform parents about the contest and ask them to sign the parental consent form and register their child at http://www.youngscientistchallenge.com/enter/application.

Week 2:

- **Observation of Problems**
  Invite students to take a week to observe the world around them. Then, invite them to record the types of problems that…
  - are in the news.
  - they observe in their school or community.
  - they hear their friends and family talking about.

  Keep all ideas on an idea wall or idea flip chart. Are students feeling stuck? If so, share the challenge thought starters with them.

Week 3:

- **Watch Videos of Previous Finalists**
  There is no better way to discover what the judges are looking for than watching videos from previous finalists! Several videos can be found at YoungScientistLab.com. After watching each video, discuss what
  made the video successful.

Week 4:

- **Narrow Down Topics and Brainstorm Solutions**
  Have students pick the three problems they would most like to solve. They should consider which topics most interest them, which problems seem the most important to solve, and which problems provide the best opportunity to use science in the solution.

  Once three problems have been chosen, invite students to brainstorm two solutions for each problem.

Weeks 5 and 6:

- **Pick One Idea and Conduct Research**
  The time has come for each student to pick one problem and one corresponding solution! Once chosen, encourage students to gather as much information as they can about their topic. They can do this through interviews, at the media center, on a device, or by additional observations. Instruct students to take notes about their research and keep a list of sources.

  Things to think about
  - What other solutions to the problem have been tried? (if any)
  - Why do you think your solution will work?
  - How will the solution you propose help solve the problem?
  - What challenges or problems might exist with your solution? How could you overcome them?

Week 7:

- **Determine the Details of the Solution**
  Using their research and knowledge of science, the students will hammer out the details of their solution to the problem. The solution must be a new idea, not something that already exists or a new way to use something that already exists. The judges are looking for innovation and ingenuity.

  If you have a group of students participating, you can conduct a mini-board room meeting. Each student can take a turn stating the problem and pitching their idea for the solution. The rest of the students can give feedback.

Week 8:

- **Plan the Video**
  Just letting the camera roll and winging it may sound fun and easy, but planning is the key to making a video with impact. Have each student write a script for their video. Encourage them to write out every word that will be spoken. They should read it out loud and make changes until they are satisfied. Next, they can use the storyboard template to plan out each scene that will be filmed.

  Share the entry video tips from past Top Young Scientists.

  Be sure the video:
  - is between one and two-minutes long.
  - explains the problem and how it impacts them, their families, their communities, and/or the global population;
  - describes a new innovation or solution that could impact or solve the problem;
  - explains the science, technology, engineering and/or mathematics behind their innovation; and
  - illustrates how their innovation could both address the everyday problem they've identified and have a broader impact locally or globally.

Week 9:

- **Record and Edit the Video**
  Students may wonder how they are going to get a fancy video camera to make their video. An expensive video camera is not needed to make a successful video. Many cell phones and digital cameras can be used to film a short video. Students who don't have access to a cell phone or digital camera can check with their teacher, school media center, or local public library.

  Videos do not need to be "produced" or have high production value. Judges are evaluating content rather than production skills.

  The final video must be between one and two-minutes long.

  What the judges will be looking for:
  - Description of the problem and how it affects the student, family or community.
  - Details about the science behind the new innovation or solution.
  - Clear explanations and a demonstration of how well the problem and solution are understood by the student (remember the idea must be a **new** innovation or solution, and cannot simply be a behavioral change or a new use for an existing product).
  - An explanation of how the innovation could have broader reach or impact beyond the student, family, or community.

Week 10:

- **Share Videos and Get Advice**
  Before submitting their videos, recommend that students preview their video with friends, family and you. Encourage the students to be open to constructive criticism.

  Videos will be scored using the following judging criteria
  - Creativity (ingenuity and innovative thinking) (30%)
  - Scientific knowledge (30%)
  - Persuasiveness and effective communication (20%)
  - Overall presentation (20%)

Videos must be submitted by 8:00PM EST on May 07, 2019. The upload page can be found after logging in at www.youngscientistlab/challenge.com.