

****Northern Virginia’s Regional SeaPerch Challenge****

****Engineering Notebook Challenge****

The Engineering Notebook Challenge is awarded to teams that skillfully communicate how they worked as an engineering team to plan, construct, and test their SeaPerch ROV design in their SeaPerch Engineering Notebook.

**SeaPerch Engineering Notebooks must include:**

1. **Use of required cover page, which includes the following information:**
	* School/Club Name
	* City, State
	* Team Name
	* ROV Name
	* Project Title
	* Picture/Sketch of ROV
	* Logo
2. **Title Page**
3. **Table of Contents**
4. **Preliminary Design Concept – Must include, but is not limited to the following:**
	* Daily journal/log of each team member’s contribution to the SeaPerch Challenge Activity. (This will continue throughout the project and must be included in the final notebook)
	* Statement of the technological problem
	* Research/Information gathered about the technological problem. (This will continue throughout the project and must be included in the final notebook)
	* Multiple forms of ideation are required but not limited to the following: sketches, notes, computer drawings, or graphics of alternative solutions. (This will continue throughout the project and must be included in the final notebook)
5. **Final Engineering Design/Concept - The Engineering Notebook should be a working document where design concepts are documented, concepts are tested, results recorded,** and a decision is made whether to proceed or redesign.  An excellent notebook will reflect the evolution of the design and development process of the SeaPerch:
* **T**he flow, comments, and progress demonstrate the real process.
* Did you encounter any problems with the design?
* How did you determine it was a problem?
* What changes did you make?
1. **Teamwork - Describe how your team demonstrated teamwork (This may be included in the daily log)**
	* Provide concrete examples of how team members worked together and how they helped other team members.
	* How did the team split up responsibilities?
	* Who did what?
	* What is the biggest lesson that the team learned?
	* What were the biggest factors of success for the team?
2. **Illustrations - Any photos, drawings, organizational charts, or any additional supporting information.**
3. **Vocabulary – The following terms must be defined and included in your final Engineering Notebook. Judges will look for teams that use the terms in the notebook vs. a single definition page, although this may be included as well. The terms must include, but are not limited to the following:**
	* **Density, volume, buoyancy, displacement, ballast,** propulsion, vectors, circuits, switches, ergonomics
	* Three other terms not listed but found throughout the research process must be defined.
4. **Engineering Notebook Presentation** – All team members must be involved in the presentation.

Other Requirements:

* + All pages of the Engineering Notebook must be bound together; a composition book or spiral notebook is acceptable. A notebook with grid format is recommended.
	+ All pages must be on 8 ½” x 11” paper. This includes illustrations and text pages.
	+ All text pages should be hand written. Illustrations should be hand drawn directly into the Engineering Notebook or created electronically to be secured into the Engineering Notebook.
	+ Cover on the Engineering Notebook must include the team logo. (See Logo Design Challenge for more information.)
	+ Engineering Notebooks must accompany the team into the classroom interview for the judges to review. Judges may ask to keep the Engineering Notebook for further discussion; these will be returned to the teams prior to leaving the challenge.