

Collect, Select, Reflect

10 Steps for Building Your Portfolio

Science, Technology, Engineering and Math

Portfolios are a systematic, meaningful and purposeful collection of your work that showcases the **process** of learning and/or the **products** of learning over a period of time. It also serves as a valuable tool for reflection and assessment of your learning and performance improvement. Portfolios may span one or more Science, Technology, Engineering and/or Math courses. The contents may be composed of paper or stored electronically, or a combination of the two.

Electronic Portfolios – Over the past decade, electronic portfolios have been used to showcase student work through sound, motion, and color. It is an effective way to share information not only in written text, but also through audio, visuals, and video formats. Documents can be stored on hard drives, Zip disks, websites, or CD-ROM.

Things to Think About Before you Begin

Purpose – Portfolios are typically created for one of three purposes:

- 1) To show growth
- 2) To showcase current abilities
- 3) To evaluate cumulative achievement

Identifying the purpose will influence other decisions you make in developing your portfolio.

What Should Be Included? Science, Technology, Engineering, and Math portfolios may include architectural and engineering graphics drawings, 3-D models, journals, write ups for science experiments, lab results, technology research reports, graphs, sketches, scientific drawings, video demonstrations, performances or exhibits, podcasts of scientific findings, projects, posters, and mathematical problems with real-world application.

Process – What will be the process for selecting and reflecting and sharing the contents and processes used in developing your portfolio?

Management & Communication – When will each piece be selected, by whom, and based on what criteria? When and with whom will the portfolio be shared?

Assessment - How will your portfolio be evaluated, and will there be a grade assigned?

Now, Let's Get Started

STEP 1: Creative Cover – This is a time to have fun and tap into your creative side using various forms of media to illustrate the selections in your portfolio. You may incorporate pictures and ideas from Science, Technology, Engineering and/or Math.

STEP 2: Letter to the Reader – Share with the reader the purpose of your portfolio and what audience it has been created for (students, teachers, parents, community, colleges, employers, etc.) Tell the reader what is included in your portfolio. Do you have audio and videotapes, CD-ROMs, photographs, 2D & 3D models, drawings, journals? Describe how you have seen improvement in your work over time. Share with the reader your process for compiling the portfolio. And, share your present and future goals.

STEP 3: Table of Contents – The contents of your portfolio should include:

- a. Letter to the Reader
- b. Goal-Setting Page
- c. Samples of Work
- d. Weekly Journals
- e. Portfolio Checklist
- f. Reflection Sheets
- g. Assessment

STEP 4: Goal-Setting Page – Prepare a Goal-Setting Page with completed sentences, such as...

- The purpose of my portfolio is _____
- My goals for the year include _____
- What I plan to take out of this class include _____
- My strengths in this area are _____
- My weaknesses in this area are _____
- The things I plan to improve upon are _____
- My present goals are _____

- My goals for the future include_____

STEP 5: Student “Artifacts” – Maintain a working folder with samples of...

- Your best and least best pieces
- Your early and later pieces
- Your favorite pieces
- Assignments that were especially difficult
- Work that demonstrates your understanding of problem-solving
- Work that shows your process
- Work that shows your final product

STEP 6: Weekly Journals – Keep a weekly journal that documents...

- your attitudes/feelings towards your work
- your thoughts on your personal progress towards goals
- your strengths and weaknesses
- what you would like to improve upon
- what you have learned from the assignment

STEP 7: Reflections on Samples of Work - Prepare a reflection sheet for each piece in your collection by completing sentences such as:

- I selected this piece because_____
- I am most proud of_____
- I like this piece because_____
- I am pleased that I put significant effort into this piece by_____
- What I know now that I didn’t know is_____
- I wish I would have done_____

- My greatest strength in this piece includes _____
- Areas that still need improvement include _____
- The goals I achieved include _____
- The goals I am still working on include _____
- In comparing an earlier piece that is similar, I think this piece _____
- I see most progress and improvement in _____
- If I were grading this piece, I would give myself _____

STEP 8: Portfolio Checklist – Complete a checklist of what is included in your portfolio, such as:

- _____ Creative Cover
- _____ Letter to Reader
- _____ Table of Contents
- _____ Goal-Setting Page
- _____ Samples of Best and Least Best Work
- _____ Weekly Journals
- _____ Reflections
- _____ Method for Assessment
- _____ Other

STEP 9: Management – Identify when work will be selected for the portfolio and by whom, such as...:

Pieces for my portfolio will be made by _____;
and _____; and will be selected...

_____ When completed (check)

_____ Every week, two weeks, three weeks, six weeks (check and circle one)

_____ At the end of the unit, quarter, semester, year (check and circle one)

My portfolio will be shared with my...

_____Teacher

_____Peers

_____Parents

_____Other_____

My portfolio will be shared at...

_____the end of the unit

_____the end of the semester

_____the end of the year

_____Other_____

STEP 10: Assessment – My portfolio will be assessed in the following ways:

_____Scoring rubric for each piece

_____Portfolio checklist where failure to meet all the criteria results in loss of points

_____Self-assessment and goal sheets

_____Teacher and self-assessment

_____Other methods, such as_____

_____Grade will be assigned

_____Grade will not be assigned

References

Health Science Technology Education Assessment Tools. CD-ROM. 2006.

<http://jonathan.mueller.faculty.noctrl.edu/toolbox/portfolios.htm>

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<http://www.eduscapes.com/tap/topic82.htm>

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