

SCRUM + Technology Integration = Empowered Students



What is Scrum?

Scrum is a framework for teamwork and productivity.





DO YOU WANT STUDENTS TO
BE ENGAGED FOR AN HOUR
OR EMPOWERED FOR A LIFETIME?

— JOHN SPENCER —

Project Vision



Product Owner - Teacher

Fixed Time and Fixed Resources

Focus on Value

Like Problem Based Learning
Approach

Responding to students and learning
environment not upfront planning

Living in a Bot World



Living in a Bot World

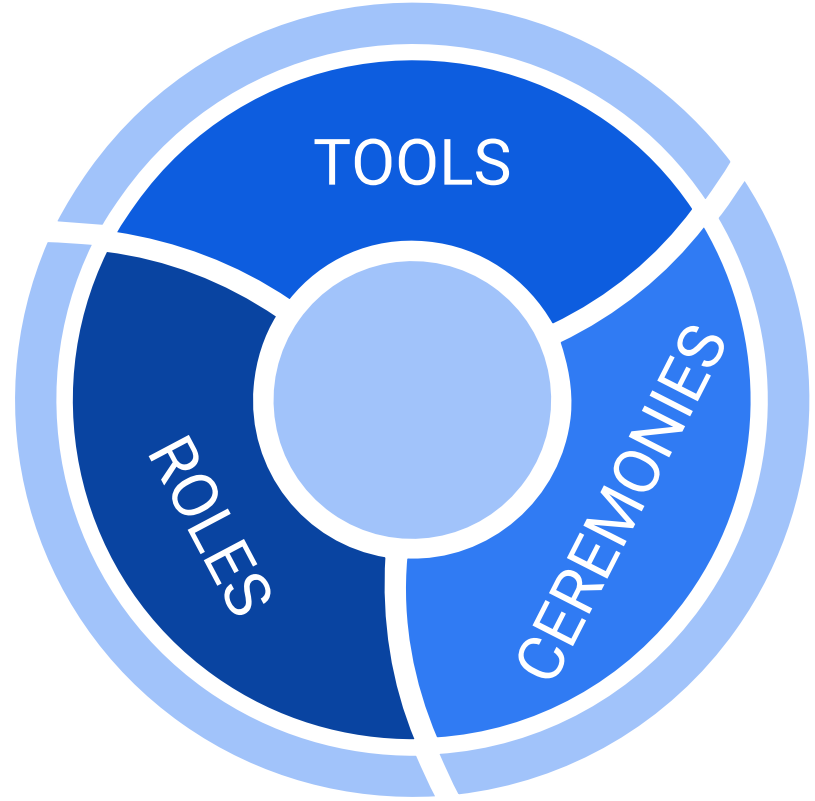


Virginia Watershed



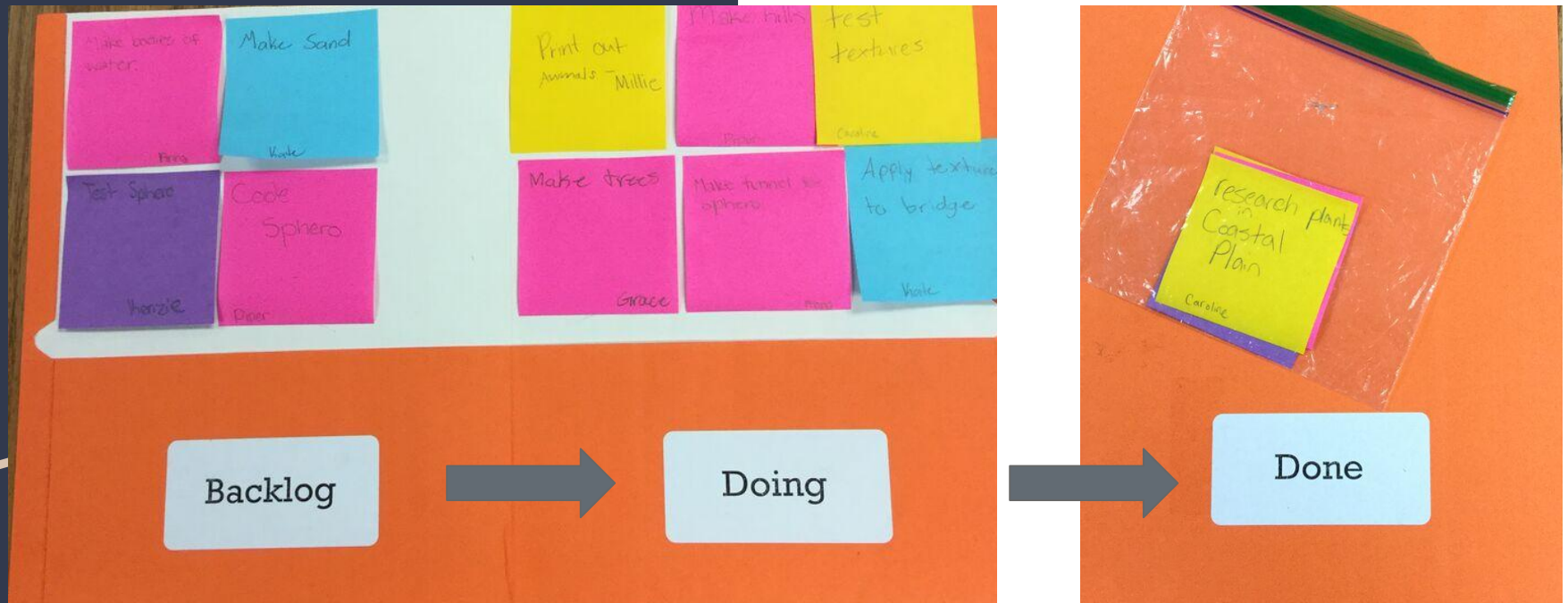
Art Museum

Scrum Basics



Scrum Tools

- Scrum Boards organize the workflow.
- Storypoints are the student defined tasks.
- Storypoints are stored in the backlog and assigned to a member of the Scrum Team.
- They are moved to “Doing” then “Done,” to communicate progress to other team members and the teacher.



Scrum Ceremonies

SPRINTS

Work Session

- Stand-up
- Work
- Stand-up

Sprint One (1-2 days)
Planning and Research

Sprint Two (2-3 days)
Creating

Sprint Three (1 day)
Presenting

Retrospective

Sprint Work Session

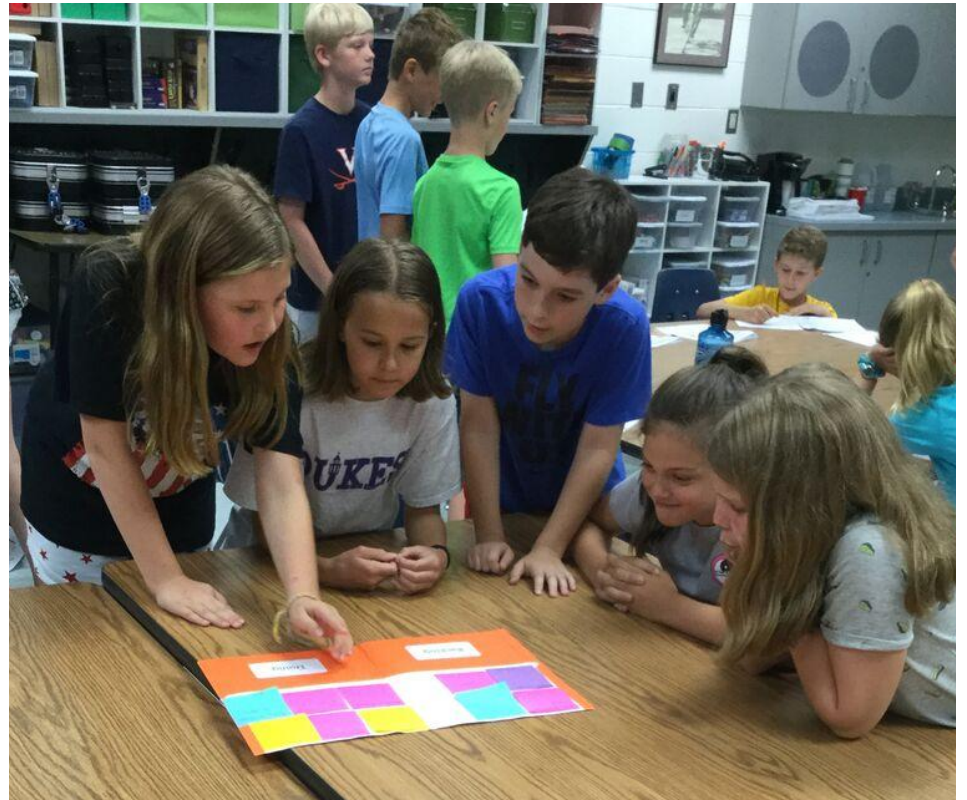
Stand Up (5 minutes)

- What needs to be done?
- What has been done?
- What obstacles might we need help with?
- What storypoints or tasks do we need to create or move?

STUDENTS GET TO WORK - 45mins - 1 hour

Stand Up (5 minutes)

- What have we accomplished?
- What do we need to do to prepare for our next class?
- Do we need to ask for help with anything?



Scrum Roles

- Scrum Team
- Scrum Master
- Product Owner (Teacher)
- Stakeholders

Scrum Team

- Diverse Team
- Self Organized
- Collaborative
- Prioritizes Tasks
- Uses Time Boxing and Estimating
- Iterative Delivery

Scrum Master - Not the Team Leader, but a facilitator and liaison with teacher. They are Servant Leaders.

Product Owner - Teacher

Stakeholders - Other Collaborative Teachers, Mentors, Administration

Scrum Terms

Velocity - Productivity in a Work Session or Sprint

FLeRD - Fail Fast Learn Renew Do

Servant Leadership - How can I help?

Minimum Viable Product - Student/Teacher defined criteria

Students learn to...

- Chunk and prioritize tasks
- Start to estimate how long a task will take
- Be collaborative problem solvers
- Communicate about obstacles and progress
- Have shared ownership for an endeavour
- Be servant leaders

US Regions Golf Course



Integrated

Science

Technology

Reading and Research

Engineering

Art

Math

The Eight Geographical Regions of the United States



Created by Melanie Lewis
ITRT, Amherst County



Coastal Plain

Excellent Harbors Located along Atlantic Ocean



Appalachian Highlands

Old Eroded Rolling Hills



Canadian Shield

Horseshoe shaped region



Interior Lowlands

Many Rivers, Flatlands



Great Plains

Grasslands, increase as move to Rocky Mountains



Rocky Mountains

Sharp Jagged Rocks



Basin and Ridge

Varying Elevations



Coastal Range

Fertile Land Located along Pacific Ocean

Planning and Research Sprint

- Presented Vision
- Discussed Minimum Viable Product
- Created Teams

- Scrum Teams had their first Work Session and began the Planning and Research Sprint.

2 - Course Minimum Criteria

One change in texture

One coding change in direction

Represents the region & includes one landscape & one waterway

Course name with one engineered feature

One artistic element/decoration related to the region

Clue card with speed per cm & any other coding tips to get around the course

Playable



Creating

- Stand Up
- Work
- Stand Up
- Adjustments?



Presenting

Bot World -
Fluency and
following
directions

US Regions -
Intro to
Programming
Spheros



Retrospective

Scrum Teamwork Rubric

Highlight the sentences that best describe your effort and teamwork today.

5 - I asked any questions I had. I pushed myself to work through the most difficult parts when a solution wasn't immediately evident. I was ENCOURAGING to my teammates and tried to include everyone. I'm happy and proud of my work today and my brain is tired because of it!

4 - I asked any questions I had. I pushed myself, but took breaks when it was difficult and a solution wasn't immediately evident. I *wasn't discouraging* to my teammates and I was involved. I didn't waste too much time. I'm *mostly* happy with my work. I got a little smarter today because of it.

3 - I could have asked more questions. I did get work completed, but I know it was not my best or I know I could have done more. I definitely tried today (maybe because someone prompted me), but occasionally I quit when it was time to think. At times I was a distraction for my teammates. At other times, I was involved and working with them. I didn't push myself to get smarter and make my brain grow.

2 - I didn't ask many questions at all. I put some effort in, but the amount of work I accomplished was very small. I was apathetic about most of the activities. I may have criticized my teammates or distracted them from work.

1 - I did not try at all. I chose to ignore my responsibilities. I didn't give or accept help from my teammates. I may have criticized my teammates or distracted them.

Now, after looking over the sentences you highlighted, give yourself and each teammate a rating. You can $\frac{1}{2}$ or .5 in your score. You will need to give support for your score if asked.

| Name | 5 | 4 | 3 | 2 | 1 | Team Accomplishments |
|------|---|---|---|---|---|----------------------|
| | | | | | | |
| | | | | | | |
| | | | | | | |

U.S. Regions Golf Course Rubric

| Criteria | 4 | 3 | 2 | 1 |
|--------------------------------|---|---|--|---|
| Science | The course has two or more changes in texture and an inclined plane. | The course has more than one change in texture. | The course has one change in texture. | The course has no changes in texture. |
| Technology | The course requires changes in speed and direction. | The course has more than one coding change in direction. | The course has one coding change in direction. | The course has no coding changes. |
| Reading, Research, & Geography | The course represents the region if it includes with several landscapes and waterways that can be found in that region. | The course represents the region if it includes two landscapes and one waterway that can be found in that region. | The course represents the region if it includes one landscape and one waterway that can be found in that region. | The course does not represent the region and has either a waterway or landscape included, but not both. |
| Engineering | The course has a name for the type of course with several engineered feature. | The course has a name for the type of course with two engineered feature. | The course has a name for the type of course with one engineered feature. | The course doesn't have a name and has no engineered feature. |
| Design & Creativity | The course has several artistic elements/decorations related to the region. | The course has two artistic elements/decorations related to the region. | The course has one artistic element/decoration related to the region. | The course has no artistic element/decoration related to the region or is incomplete. |
| Math | The course has a clue card that gives specific speed and distance (rate) calculations to help the coder. | The course has a clue card that gives at least two clues to help the coder complete the course. | The course has a clue card with speed per cm and any other coding tips to get around the course. | The course does not have a clue card or the clue card is incomplete. |
| Neatness/Effort | The course goes above the expectation and has an innovative design. | The course has creative elements, but overall certain areas could have been of higher quality. | The course meets minimal viable product standards and is playable. | The course does not meet minimum effort and neatness was not displayed. |

Student Perspective...

I like Scrum because it helps me stay organized when working on a project. That way everyone gets to help. - Millie and Caroline

Scrum has made it easier to communicate with others during a project. – Grace

Scrum has made things better because we just get more done.
- Scarlett

Scrum has helped me communicate better with people I work with and listen to people's ideas. - Emily

Scrum changes group work because kids have more freedom. Teachers trust us to make decisions. - Beth

How has SCRUM changed you as a learner?



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Want to learn more?