Number Crunchers Phase 4 artifacts

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I. System Overview

The Number Cruncher math tutoring application that runs on java swing and is designed to be colorful and easy to use for children in the grades k-4. The application provides the users access to practice test and unit test material where most of the questions are randomly generated. Users are given other areas to access youtube videos of the concepts as well as access to other sites for more problems. This system is also able to track the progress of the user for completion of the practice and unit test. With the completion of both those tests a user earns one star per 80% or more on a practice test and 3 stars on a unit test that has a grade of 80% or more. Included in the system is a database to store login, other user info, and also encrypted versions of the password to maintain security.

Number Crunchers is very colorful and includes a large amount of easy to identify and responsive buttons. These buttons allow the user to navigate the software effectively and allows them to easily understand what each button does. Overall the software is easy to use due the fact that there are clear and high contrast icons which guide the user on what the action the button does. Overall the system provides a one stop shop like area for the user to access tutorial material, testing material, and videos to learn about the math concepts that are assigned. The videos and recordings sections are pages where the user can have their web browser open to the linked youtube video on the math topic.Another section for more problems follows a very similar one stop shop concept.

This system uses a database for user info which includes their login info which is the username and password. The storage of the password on the database is encrypted to the database. The user can use their email to change their password anytime they

want to. The password must be 8 characters though. A user has to transition from practice tests to unit tests. Practice tests are tests where the user has to do one in order to be able to access the unit tests. The practice test consists of 5 questions and the user has 3 attempts to get the questions correct with a hint function available to help the user either by the user pressing the hint button which is a button that has a question mark icon on it or it automatically appears after the third incorrect answer. Unit tests however have two versions: the easy and the hard version. Both versions have one attempt per question and no hints available. The easy version is very similar to the difficulty of the practice test whereas the hard version is challenging and in places it surpasses the standard requirements. It will also be challenging as the numbers can be bigger.

II. Feature Description

The Number Crunchers app has many useful features, one of the features being that the user can use the app to find more information online and they don't have to do their own research. They instead can access more problems and info using the recordings and videos sections for instructive youtube videos on concepts. These sections have instructive videos linked to buttons labeled with the concept title and an icon that corresponds to it. When pressed these buttons will open into a web browser and then the link to the youtubvide will start up and play for the user. The more problems section provides a similar feature but instead of the youtube video on the concepts it links the user to other sites with more problems and tutorials. This feature allows users to learn more even easier as they do not have to look up the topic themselves.

The Number Cruncher application has another feature and that feature is the practice tests and unit tests. The number Cruncher application has a total of 3 practice tests per grade. This means there is one practice test per unit so there is one for geometry, base ten operations, and operations / algebraic thinking. These tests cover

the standards set and are varied in what questions are covered in order to cover everything within the unit. Most of the questions in the practice tests and units tests are randomized. The biggest difference between the practice tests and unit tests are that the practice tests are tests where the user can do three attempts at the question and can either click on the hint button to get a hint about the question or an auto hint which is displayed after the third try. The unit tests are much higher stakes with only one attempt per question. There are two versions that users can take. One is the easy version and one is a hard version. The easy version is very similar to practice tests, just the hints and the multiple attempts are removed. The hard version is where the numbers are made harder and should be a challenge as it reaches the upper limit of the standard requirements. The rewards earned for these tests vary with the practice test being one star, then easy unit test being 3 stars, and the hard test being 5 stars.

The rewards and profile system is another highlight feature for the software. The profile and reward system is a place where the user is able to examine their grades from practice and unit tests. The my scores section is a place where the user can view a dialog box of their scores. The rewards section is where the user obtains stars for completing the test and the teacher can provide real life rewards for obtaining certain milestones. The rewards in the application provide the user a feeling of accomplishment because they have earned something for completing the test. Overall the profile and rewards system let the user access and evaluate their progress on the application. The teacher could also suggest to do this in class which allows the user to ask the teacher questions on concepts they found hard on the app.

III. Requirements

- Practice test material
    - Practice tests and unit tests shall include multiple choice, matching, and/or short answer

    - Practice test and unit test questions shall be randomized
    - Final scores for each unit shall be recorded for each student.
    - The system shall prevent the user from accessing a unit test without the user completing at least one practice test.
    - The practice test material shall be similar to unit test in both level and testing style
    - The system shall provide the user a reward in the form of stars upon complete or practice test/ unit test. These stars are recorded in a total number that the user has.
    - Practice and unit tests shall provide differing numbers of stars with unit tests being worth more stars.
    - Explanation/problem-solving assistance will be offered after three failed attempts on a question.
    - The system shall provide the user assistance after three failed attempts on a question.
    - The system shall track completed questions in real time when the user is taking a practice test/test
    - The user shall reach a passing score on a least one practice test within the unit before attempting a unit test.
    - The system will not provide the user for chances per question in a unit test there is only one attempt per.

- Tutorials
    - Tutorials both video and written shall follow the standards
    - Tutorials shall cover the concept within each unit providing a guided example for each concept
    - The system shall be able to support links to video and other outside sources
    - The system shall allow user input for the challenge question at the end of the tutorial.
    - Some tutorial sections should be longer and contain more sections than others based on topic complexity.
    - The system shall provide the user access to all the unit tutorials.
    - The system shall have concept tutorials separated by the units
    - The system shall allow the user to view the tutorial as many times as the user wants to.
- Printing test results and progress

    - The system shall have a display of a percent complete symbol at the top of the practice test and unit test so the user knows how much they have left to do.
    - The user shall be able to review their scores on the users profile page.

- Different levels of difficulty of the tests for each grade
    - Unit tests shall be accessed once at least one practice test is completed.
    - Unit tests shall consist of two levels of difficulty for each grade easy and hard.

    - Lower difficulty unit exams shall contain less complex questions; harder exams shall consist of more difficult questions..
    - Lower-difficulty tests should be more forgiving with the place value requirement; harder tests should not be.
    - The system shall process the results of each unit exam, and return these results to the student user in less than 10 seconds.
    - The load time between accepting a student user's answer, processing that answer, and advancing to the next question should not be greater than 3 seconds.
    - Questions shall be marked correct/incorrect after an answer is submitted. No explanation/hints shall be given unlike the practice tests.
    - The user shall be able to view their test results after completion of the test.

- Security logging in and logging out in manner that maintains privacy
    - The system shall limit the access of the student user in comparison the student shall not be able to maintain the material.
    - The system shall provide users without accounts guest access where the homepage can be viewed.
    - System shall have an internal user id where the progress for the user is tracked.
    - System shall alert the user if their username is already chosen during their account creation period to maintain unique usernames.
    - The system shall be designed with clear labels for the username and password input boxes.
    - The system shall hide the user input of the password so it cannot be read off the screen.
    - The system shall store the user credentials in encrypted form into a database
    - The system shall provide every user with a profile page where progress and rewards are displayed.
    - The system shall require the user to input their email when creating an account.
    - The system shall prevent the user from inputting the same email when creating an account.
    - The system shall force the user to have a password that follows the requirements having least a total of 8 characters long.
    - The system shall prompt the user if the password requirements are not met when attempting to create the account.
    - When the user exits the system the user shall be signed out of the system.
    - The system shall force the user to have an email the account will not be created without an email.

- User Rewards
    - System shall add 3 stars to score when the user gets a score equivalent to an 80% or higher on the easy version of the unit test.
    - System shall add 5 stars to score when the user gets a score equivalent to an 80% or higher on the hard version of the unit test.

- System shall add 1 star to score when the user gets a score equivalent to a 80% or higher on a practice test.
- System shall track the number of stars earned in real time with delays being no more than 10 seconds.
- Stars are earned through the completion of unit tests and practice tests.
- System shall determine the amount of the stars earned based on the grade the user gets on the unit test/practice test.
- The system shall display the logos on the user's profile with the logo of a star being increments of ten so the first logo is 10 and there is another one every 10 stars earned up to 100 stars.

IV. Design

Our goal for this project from a design perspective was to build an effective application with an intuitive UI universally accessible to all users; pages and buttons are organized neatly and simply, and the user can access a help-interface at any point during their experience during key features of Number Crunchers via a convenient sidebar should they require more direction. Testing material is organized logically as well, and given that all tests and tutorials follow a similar pattern, the user should have a relatively few issues navigating through all content and should become used to where and how things are laid out very quickly. When a user starts the Number Crunchers application, they will be met by a welcome screen with clear labels indicating login/registration hubs for students. There is also a 'guest mode' that any use will have the opportunity to tap into without registering first, gaining access to the home page in addition to several example features to demonstrate some of the the application's capabilities; they will not have access to any core study content however, and will be prompted to create an account should they attempt to navigate to those materials. The 'For Students' section of the welcome screen will take the user to the login page, which will also present them with individual links to pages to reset their password and create an account. Upon creating an account and logging in successfully, the user will be able to begin accessing the application's content immediately.

Following the completion of the login process, the user will gain full access to the home page, where there are several points of interest waiting for them. In the top right corner, they will be able to connect to their profile that will display stars that they have earned, a simple percentage diagram to illustrate their progress through a particular unit, in addition to a running total of the user's graded assignments.. In addition to housing their profile, the home page will also enable the user to determine/filter which unit they would like to work in/view via a 'unit select' dropdown menu; clicking on a different unit number will populate all study materials and tests with the content of that unit, allowing the user to refer back to previous tutorials or attempt more practice problems from an earlier unit. Since all units will need to be progressed through linearly, units beyond the one the student is currently working on will be locked until the final unit test has been passed. Upon clicking the 'tutorials' button, the user will be led to a page displaying all tutorials for a particular standard across three units, geometry, operations and algebraic thinking, and operations in base 10. After selecting the tutorial they would like to work through, the system will introduce the concepts and demonstrate several examples; the user will be able to navigate through the tutorial and reveal more information by clicking the arrow. Most tutorial sections will conclude with a problem the user must complete based on what they have just previously learned in order to progress to the subsequent section, while others may be more open--ended and self-directed, allowing the user to . Once the user answers correctly, the arrow will change color, indicating that the next section has unlocked and that they can move on.

The home page will also enable the user to attempt practice tests, which function as prerequisites to unit exams in Number Crunchers. Both types of tests will be structured and formatted almost identically, though practice tests will feature a hint function to display an example problem for the user to refer to as denoted by the question mark icon; unit tests will not

have this function. Practice tests will allot the user three opportunities to answer correctly; after the user exhausts their chances, the answer will be automatically displayed, a suggestion or explanation will be offered, and no points will be received for that particular question. An additional difference between the two is that while taking a unit test the user will be prevented from navigating to any other page prior to completion and will be warned that attempting to do so will cause them to receive zeroes on any questions that they did not submit answers for. Student users will have the option to consult third-party videos on topics that tutorials did not cover by clicking the recordings icon; organized by both grade and unit should they feel like the resources provided through Number Crunchers directly does not answer every question they may have.If a user requires more information than the home page can provide, they can access further resources in the “more help” screen, where additional practice problems, class recordings uploaded by their teacher, and a mechanism for submitting questions are implemented.

V. Testing

A. Testing Scenarios

- Test Scenario One (account creation and login testing)

  - check the sign up function of the application

    The user presses the signup button of the application and then should see the create an account screen. Then the user will enter a username, password and email. All will be valid this time. The user presses the create account button. Then the user repeats this task with a password that is too short and the email that is incorrectly formated. The behavior in both cases being that the user will have to fix either their password length or the email a notice of this problem will be displayed via a dialog box after the create account button was pressed this will continue till it is correct.

-check login behavior with invaild password and valid username

The user enters a correct username and then an incorrect password and then presses the login button. The behavior of this action is a dialog box informing the user their username or password is invaild.

-check login behavior with invaild username and valid password

The user enters an incorrect username and then enters a valid password and then presses the login button. The user should receive a dialog box notifying them that their username/password is incorrect.

-check login behavior with valid credentials

The user enters a correct username and then enters a valid password and then presses the login button. The user should receive a dialog box notifying them that their username/password is correct and login is successful with an ok button within the button. The user presses the ok button and then is directed to the homepage of the application.

- Test Scenario Two (practice and unit test functionality)

- check the behavior of a the user putting a blank into the test

The user will just click the submit button and the program will consider that as an incorrect answer as it is an incorrect answer and so a red x and the word incorrect is displayed. If in a practice test there are two attempts on the problem and if in a unit test the program will move on to the next question.

- check the behavior of inputting a incorrect answer

The user will enter an answer to the displayed problem that is invialid and then press the submit button. The program will consider that as an incorrect answer and so a red x and the word incorrect is displayed.

If in a practice test there are two attempts on the problem and if in a unit test the program will move on to the next question.

- check the behavior of inputting a correct answer

The user will enter an answer to the displayed problem that is a valid one and then press the submit button. The program will consider that as a correct answer and so a green check mark and the word correct is displayed. Since the answer is correct in both the practice test and unit test the program will move on to the next question.

- check the behavior of completing the test

The user will enter answers to all five question and pressing the submit button each and on the final one the user will be directed to a results page where the user is able to see the percentage they got correct, the answers they submitted to each question and then the user press on a button that has the text of question and the question number ex. “Question 1” and be able to review what the question was.

B. Testing Questions Addressed

- Does everyone understand how their work fits into the project? Does everyone know their critical-path status? Are all current project members pulling their weight? Does everyone know what they and all others are doing?

Yes everyone knew what we were doing and where the work was fitting into the overall project. We would meet very frequently and then discuss what people were working on. Then we would spread out all the work fairly evenly. The most recent division of work was that one worked on the more help section of the application; this section was where videos, and more problems set links had to be collected and linked to buttons. This section was assigned to John and he

worked solely on that till he was done. Firas was assigned to the login and progress programming which was centered around getting the database stuff to work. Matt was assigned to make the tests and tutorials for the applications. John also as he completed stuff would communicate his availability to do other things to help others. Everyone pulled their weight fairly equally. The work was spread out well and everyone knew what each other was doing so if help was needed then it was easy to figure out what was happening. The project work was spread out well and the deadlines were set and met.

- Is documentation being finalized? Is everyone working to capacity?

  Yeah documentation is being finalized and the work on that was spread out fairly evenly and again if people have more time available than others then they would take on more work. Everyone is working as much as then can on both completing the project and cleaning up the code. Again the work is spread out well thanks to having a good discussion about what is needed and who has the time for working on the documentation and finishing their end of the project. Everyone put in a lot of effort and worked very hard to finish and document the project.

- Is the database software working properly?

  The database setup has not been the easiest to set up and connect with our java based application. That has been the most troublesome part of the project. The database currently is encrypting the user's password and email so that is not plaintext in the database. The database is able to store the user login information securely and easily. The database is able to store important

information and then retrieve it when it is needed by the user. Firas has been working on the database and the login the functality.

- Does communication between teams and between teams and users appear to be satisfactory?

  The communication between team members has been more than satisfactory. We have been using discord to discuss what everyone is doing. This has been useful as discord has useful code highlight and pinning of the messages.So yeah the communication has been constant and clear. We have been doing well overall with communicating what work needs to be. The fact that we can research errors and bugs together and discuss them on discord is very useful. Overall communication has been consistent, of high quality, and has allowed work to be completed in a smoother fashion.

Meeting minute (12/01/20) outside class time (4:30- 5:30) Chairperson John

- All in attendance
- Working on and plan for the next few weeks
- Discussed what we need to do, Firas database, John More helps pages, Matt tests
- Discussed how everyone will be doing their tasks and how they are going to balance the the work of other classes
- We realize time is going to be very tight.

Meeting minute (12/03/20) outside a class time (3:30- 5:00) Chairperson Matt

- All in attendance
- Learned of the need for the tests to be randomized
- We transitioned the focus of the weekend to getting a randomization concept and design to work
- We have split focus because of the other classes
- Firas is working on getting the database to work it has proven difficult
- John have been collect resources and has had a heavy course load
- Matt is the main person focusing on getting randomization to work

Meeting minute (12/06/20) outside a class time (11:00- 12:30) Chairperson Firas

- All in attendance
- We have a random test but it has problems that need to be ironed out
- Connection issues with the database are being problematic

- Firas and John are working fixing those connections issues
- Matt is ironing out bugs in the test with help for other wherever possible
- John has made a list of the pages that need to be made and list of concepts to cover in the tests

Meeting minute (12/07/20) outside a class time (1:30- 3:30) Chairperson John

- All in attendance
- The random test is slowly being improved
- The database still won't work
- The morehelp pages have been started and created into templates
- Tried getting the database to work not much luck
- Morehelp is being design and the videos are being gathered
- John is working on morehelp
- Firas the database
- Matt the tests

Meeting minute (12/08/20) outside and inside a class time (3:30- 5:00) Chairperson Matt

- All in attendance
- Class discussed changes
- Worked on the database still menial progress
- Classmate provide tip on database
- John is not feeling well did not get to work on morehelp
- Matt worked on the test short answer and multichoice work implementation is not the best
- Firas is researching the database stuff

Meeting minute (12/09/20) outside a class time (1:30- 2:30) Chairperson Firas

- All in attendance
- Matt is working the large task of tests and tutorials
- Firas is working on the database
- John is working morehelp and the database
- John figured out why the database was being problematic

Meeting minute (12/10/20) outside a class time (4:30- 5:00) Chairperson Matt

- All in attendance
- John has finished linking all the videos in the videos pages
- Firas has made progress on the database
- Matt has worked on tests and tutorial
- Continue to make progress in the areas we have been working in the past week.

Meeting minute (12/12/20) outside a class time (12:00- 1:00) Chairperson Firas

- All in attendance
- John has finished the videos and recordings pages with the icons resized and placed them on to buttons
- Fira has got password and user handling setup is adding a tracking feature
- Firas will be adding a tracking feature for tests and encryption for password

Meeting minute (12/14/20) outside a class time (1:30- 2:30) Chairperson John

- All in attendance
- Matt has a test template to follow

- John has finished all the more help stuff and available to helparound and work on documentation
- Firas and is working on getting the database done
- John finished to profile page
- Matt will do O/A and Geo test
- John will do baseten test
- Matt will do tutorials

Meeting minute (12/15/20) outside a class time (4:30- 5:00) Chairperson Matt

- All in attendance
- John worked on reimage resizing, baseten tests, and documentation
- Firas worked on encryption and error handling
- Matt worked on test and tutorials
- John added links to buttons to navigate stuff

Meeting minute (12/16/20) outside a class time (8:00- 9:00) Chairperson Firas

- All in attendance
- Discussed what we need to for 12/23
- Matt needs to continue with the tests and tutorials
- John needs to finish documentation
- Firas needs to finish database error handling and progress tracking

Meeting minute (12/18/20) outside a class time (4:30- 5:00) Chairperson Matt

- All in attendance
- Look over all our progress and worked together to fix database error
- Same to do list as 12/16

Meeting minute (12/21/20) outside a class time (2:30- 3:30) Chairperson John

- All in attendance
- Worked on polishing and fixing error
- Matt still needed to create tests
- John finished documentation
- Firas database is working

Meeting minute (12/22/20) outside a class time (2:30- 4:30) Chairperson Matt

- All in attendance
- Matt needs to finish geo tests and tutorials
- John need to be ready link all new pages
- Firas need to add progress tracking to new tests

Meeting minute (12/23/20) outside a class time (9:30- 11:00) Chairperson Matt

- All in attendance
- Practice and cleanup

Presentation practice.

Kinder	Grade 1	Grade 2	Grade 3	Grade 4
o/a rec	o/a rec	o/a rec	o/a rec	o/a rec

https://www.youtube.com/watch?v=imMe7z05ZUg	https://www.youtube.com/watch?v=OPKfK4__mE4	https://www.youtube.com/watch?v=ZgzpTx-s9Zo	https://www.youtube.com/watch?v=1im4DOvgstY	https://www.youtube.com/watch?v=a8BXdGhF2-A
https://www.youtube.com/watch?v=qxUWPgWxuVM	https://www.youtube.com/watch?v=EA-khC5_zPA	https://www.youtube.com/watch?v=vO6WW1BGbLw	https://www.youtube.com/watch?v=8ALuD3BR938	https://www.youtube.com/watch?v=KcKOM7Degu0
https://www.youtube.com/watch?v=HPuTdjM8lPA	https://www.youtube.com/watch?v=akNAMF-SJkU	https://www.youtube.com/watch?v=jDIj0CUjGvM	https://www.youtube.com/watch?v=i9iGu_gDOU0	https://www.youtube.com/watch?v=E5UfrnbTPGo
o/a vids	o/a vids	o/a vids	o/a vids	o/a vids
https://www.youtube.com/watch?v=igcoDFokKzU	https://www.youtube.com/watch?v=zJyT6MIlkAw	https://www.youtube.com/watch?v=CqBiAcH0CJM	https://www.youtube.com/watch?v=Binv6hviQZc	https://www.youtube.com/watch?v=LRAXq_oeGd4
https://www.youtube.com/watch?v=3AQ9v0bUOpI	https://www.youtube.com/watch?v=FDP0mbsVX9A	https://www.youtube.com/watch?v=yKQAFP8ANP0	https://www.youtube.com/watch?v=Doqt7bb8Gno	https://www.youtube.com/watch?v=kAhpVxd4I0w
https://www.youtube.com/watch?v=W6Uux8w_GNI	https://www.youtube.com/watch?v=tlHMLEq6kXs	https://www.youtube.com/watch?v=zQGksxr1ZmI	https://www.youtube.com/watch?v=7wv-T7h9rnk	https://www.youtube.com/watch?v=4B09Lk6DTyk
Base ten rec	Base ten rec	Base ten rec	Base ten rec	Base ten rec
https://www.youtube.com/watch?v=G05AgnEGmgw	https://www.youtube.com/watch?v=mmOYygjuZWM	https://www.youtube.com/watch?v=XhJVqYbjhSY	https://www.youtube.com/watch?v=jvp0mtr1kFM	https://www.youtube.com/watch?v=nxbW4GGdn9I
https://www.youtube.com/watch?v=MmLMU8BqyKw	https://www.youtube.com/watch?v=gCE4iy9YRVM	https://www.youtube.com/watch?v=ZJ39gHgz_Dk	https://www.youtube.com/watch?v=hlui5ZdkdQY	https://www.youtube.com/watch?v=Rt8ExTLwJo0
https://www.youtube.com/watch?v=PGgLPEdu2EA	https://www.youtube.com/watch?v=Tc-C_804hdE	https://www.youtube.com/watch?v=c5xLHlAvYI0	https://www.youtube.com/watch?v=jb8mFpA1YI8	https://www.youtube.com/watch?v=PZjIT9CH6bM
Base ten vids	Base ten vids	Base ten vids	Base ten vids	Base ten vids

https://www.youtube.com/watch?v=kIPjwstGqPM	https://www.youtube.com/watch?v=WwGwQ4oGloY	https://www.youtube.com/watch?v=d1rJlne4ZE0	https://www.youtube.com/watch?v=VPdE5aOH52g	https://www.youtube.com/watch?v=RFFh4BYLr5s
https://www.youtube.com/watch?v=_7yZ-FIBj-g	https://www.youtube.com/watch?v=WwGwQ4oGloY	https://www.youtube.com/watch?v=zOQJcETXChc	https://www.youtube.com/watch?v=70Nn-X2ScoY	https://www.youtube.com/watch?v=1q_bbuI_xCQ
https://www.youtube.com/watch?v=uedvwH6Ay18	https://www.youtube.com/watch?v=WozN0hJbALM	https://www.youtube.com/watch?v=nuuxD_J4G2w	https://www.youtube.com/watch?v=vlifeMSVh6I	https://www.youtube.com/watch?v=-E3BXA___XA
Geometry rec	Geometry rec	Geometry rec	Geometry rec	Geometry rec
https://youtu.be/svrkthG2950	https://www.youtube.com/watch?v=p2ZvfL_x_WE	https://www.youtube.com/watch?v=RgWKM-e9fWQ	https://www.youtube.com/watch?v=bBgR1QkR9K0	https://www.youtube.com/watch?v=9O7D-YiSxOo
https://youtu.be/u1Fm1Qg87eE	https://www.youtube.com/watch?v=OmI7ymbSjRk	https://www.youtube.com/watch?v=tGDfRS_czZk	https://www.youtube.com/watch?v=DLhFo9DVICE	https://www.youtube.com/watch?v=KkG_9KBWctk
Geometry vid	Geometry vid	Geometry vid	Geometry vid	Geometry vid
https://www.youtube.com/watch?v=KvYh1e93BII	https://www.youtube.com/watch?v=NmaKIT2Zrfk	https://www.youtube.com/watch?v=VQBQZ_jvpZA	https://www.youtube.com/watch?v=0hZ5-_bzz2Q	https://www.youtube.com/watch?v=g7K4zztMXT0
https://www.youtube.com/watch?v=gcMbiMQ-bAU	https://www.youtube.com/watch?v=NFJLxia1kGE	https://www.youtube.com/watch?v=00m3YhLT6fA	https://www.youtube.com/watch?v=jgWqSjgMAtw	https://www.youtube.com/watch?v=xO4n3LfmVag
More prob	More prob	More prob	More prob	More prob
geo	geo	geo	geo	geo
https://www.education.com/games/kindergarten/2d-shapes/	https://www.education.com/worksheets/first-grade/geometry/	https://www.education.com/worksheets/second-grade/geometry/	https://www.education.com/resources/third-grade/geometry/	https://www.education.com/worksheets/fourth-grade/geometry/
Base ten	Base ten	Base ten	Base ten	Base ten
https://www.kha	https://www.kha	https://www.kha	https://www.kha	https://www.kha

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o/a	o/a	o/a	o/a	o/a
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