MJoSHT
Malaysian Journal of Science, Health & Technology
[mjosht.usim.edu.my]

USIM

Article

Gamification of Al-Khawarizmi Number Basis Module for Gifted and Talented Muslim Students

Norazlina Subani, Hadif Syahuputra Syahizam, Akif Zafran Normanhisham, Farith Akhtar Rahmat, Akil Naeem Muslim, and Muhammad Adam Irfan Sharizan

Kolej PERMATA Insan, Universiti Sains Islam Malaysia, 71800, Nilai, Negeri Sembilan, Malaysia.

Correspondence should be addressed to:
Norazlina Subani; norazlina.subani@usim.edu.my

Article Info
Article history:
Received: 1 February 2024
Accepted: 11 July 2024
Published:7 October 2024
Academic Editor:
Muhammad Safwan Ibrahim

Malaysian Journal of Science, Health & Technology

MJoSHT2024, Volume 10, Issue No. 2
eISSN: 2601-0003

https://doi.org/10.33102/mjosht.v10i2.395

***Abstract*— There are a few bright and intelligent students who have a poor level of achievement in mathematics. They think that mathematics is a boring subject and not important in daily life. A special module named the Al-Khawarizmi Number Basis Module will be used as an intervention step for students who need this guidance and support to achieve excellence in mathematics, increase their level of understanding of professional mathematics, and give encouragement to Muslim students in cultivating a mathematical life. The main objective of this research is to develop a game card for gifted and talented Muslim students at Kolej PERMATA Insan, Universiti Sains Islam Malaysia. This module helps students enhance their understanding and achievement in mathematics. This module contains three main topics, namely rational numbers, factors and multiples, and standard form. The effectiveness of this module needs to be evaluated and analyzed carefully. This way, the module can improve the level of achievement and understanding of gifted and talented Muslim students, which can then be shared with students that are in mainstream schools. In completing this module, students are also tested with a game card called Find and Match: Al-Khawarizmi Robot of Number (Riz and Ron). Then, students will undergo a pre-test and post-test to assess their level of achievement. The implementation of this module can increase understanding and strengthen the professional knowledge of mathematics among gifted and talented Muslim students and encourage students to cultivate mathematical knowledge throughout life.**

***Keywords*— Al-Khawarizmi Module; Mathematics; Game Card; Intervention Process; Gifted and Talented Muslim Students.**

I. INTRODUCTION

Science and mathematics play a crucial role in the fields of science and life application, triggering innovations and creativity that contribute to a country's progress. However, many students find mathematics challenging due to its reliance on logical thinking and basic concepts. According to Safura and Norziah [1], many students perceive mathematics as boring and dreadful; therefore, they are thinking that it is a useless subject. This leads to low exam results among students. Factors contributing to this lack of interest include not learning mathematics early in life, not applying mathematics in daily life, thinking less, and not practicing during free time.

According to Yusminah [2], students with problems in mathematics often lacked number education or counting skills before school. To understand mathematics, students need to

think, do exercises, and solve problems by writing answers to each solved problem. Students do not need to copy the question, but they need to show the correct calculation in their solution without having to look at the answer. Scratch books can help students count, think, and note down formulas and draw cipher imaginations. Additionally, students need to plan, practice, and familiarize themselves with the specific time limit for each solved question. For example, students should solve a simple problem within an average of one to two minutes per question. If they cannot solve the problem within the set time, they should practice solving the same problem repeatedly until it can be solved within the set time.

The same problem also often happens to gifted and talented students. Although these students are gifted and talented, they need special education and attention because of their disabilities or behaviour disorders [3]. Gifted and talented students are very exceptional students, and they require modifications to the regular school program to achieve their needs and potential [4]. To meet their needs, teachers and educators need to modify their teaching methods and curriculum content so that they can attract students' interest in enhancing their understanding of mathematics [5].

For a teacher with gifted and talented students, their real challenge was to observe, recognize, and apply various activities to their students' level of intelligence [6]. This is because these students have a higher level of ability compared to their friends who are in the same age range, atmosphere, and experience. Gifted students can have more than one domain of intelligence. According to Gardner's theory of multiple intelligences, there are eight domains identified in gifted and talented students, which are spatial-visual, verbal-linguistic, interpersonal, intrapersonal, logical, mathematical, musical, existential, and body-kinesthetics intelligence domains [7] – [8].

Brendan [9] stated that gifted and talented students have good academic achievements, but their emotional development needs to be given high attention, in line with the National Education Philosophy, which emphasizes the overall and balanced development of individual potential in terms of physical, emotional, intellectual, and spiritual aspects. However, gifted and talented Muslim students at Kolej PERMATA Insan have the same problem in mathematics. This is because students are less able to master knowledge that is based on logical problems caused students think about mathematics and its relation to it. In addition, students lack understanding of basic concepts in mathematical calculations [10] – [12].

Therefore, the Al-Khawarizmi Basis Number Module will be used as training or intervention for students who are weak and have problems in mathematics subjects. The main purpose of this module is to strengthen and enhance the knowledge of mathematics for gifted and talented Muslim students who are less brilliant but have the potential to excel in the field of mathematics. The effectiveness of the Al-Khawarizmi Basis Number Module needs to be evaluated and analyzed among gifted and talented Muslim students at Kolej PERMATA Insan, Universiti Sains Islam Malaysia, by implementing the game card called Find and Match: Al-Khawarizmi Robot of Number (Riz and Ron).

II. METHODOLOGY

In this research, some topics have been chosen based on the theme, such as the Basic Concept of Mathematics (Rational Numbers, Factors and Multiples and Standard Form). Based on this topic, students are analysed based on their level of achievement by playing a card game. In this game, the player's role as a character of Al-Khawarizmi (Riz), who is a Muslim scholar. While students solve the game correctly and perfectly, students will be declared as a Ron (Robot of Numbers), which refers to their excellent brain.

A. Respondents

Gifted and talented Muslim students at Kolej PERMATA Insan aged between 13 and 17 years old with a poor level of achievement in mathematics subjects are identified. Students will be given focused interventions by following a series of workshops. This mathematics strengthening workshop is held for the purpose of strengthening and solidifying the knowledge of mathematics for gifted and talented Muslim students who are less brilliant but have the potential to excel in the field of mathematics.

B. Al-Khawarizmi Number Basis Module

The Al-Khawarizmi Number Basis Module will be given to students who are weak in mathematics throughout the workshop. Table 1 shows the topics contained in the module.

Table 1. Topics of Al-Khawarizmi Number Basis Module

Theme/Title	Game Type	Topics
Al-Khawarizmi Number Basis Module	Find and Match Game Card (Riz & Ron)	• Rational Numbers (Form 1) • Factors and Multiples (Form 1) • Standard Form (Form 3)

The teacher will comprehensively explain the topic to students before beginning the exercises. Students will complete all questions and exercises in the modules, and they will discuss them in groups. A facilitator among intelligent Muslim students with an excellent level of achievement in mathematics will be appointed for each group, and each group will play a designated game for all four modules. Each student will be evaluated individually through a test for their understanding of the module. Their scores will be recorded for comparison and analysis. A survey questionnaire will be given to each student to evaluate and comment on the workshop's implementation. This approach aims to enhance students' understanding and achievement in mathematics.

C. Design of Find and Match Game Card

The main purpose of the game is to determine the speed of the students's thinking and understanding. Figure 1 shows the packaging design of the Al-Khawarizmi Number Basis Module.

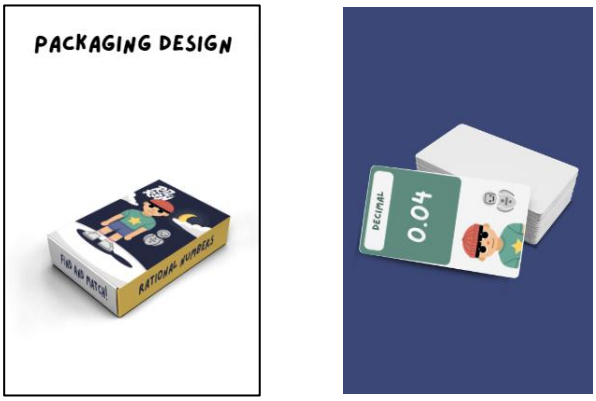

Figure 1. The packaging design of the Al-Khawarizmi Number Basis Module

Figure 2 shows the design used on the front of the game card. The abbreviation "Riz" is a summary of Al-Khawarizmi, a foremost Islamic scholar in ancient times who had a wise mind, and "Ron" is an abbreviation for the word robot of numbers. "Thus, when the students play this card, they will bring the character of Riz, and the speed of the students' thinking and playing is like the robot that can solve mathematics problems successfully.

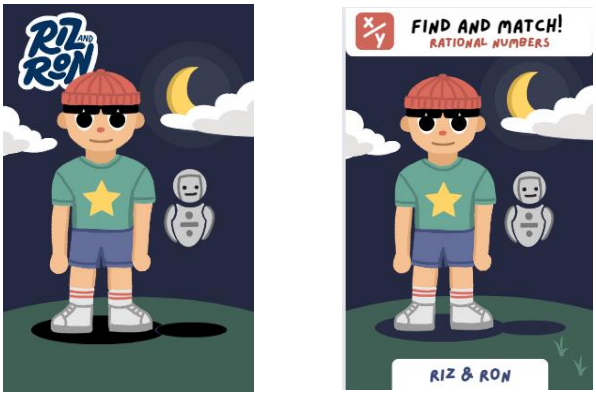

Figure 2. The Complete procedure to finish Al-Khawarizmi Number Basis Module

Figure 3 shows four complete sets of family numbers, which are the numerator, denominator, decimal, and fraction cards. Students need to find the four types of family numbers to complete their set.

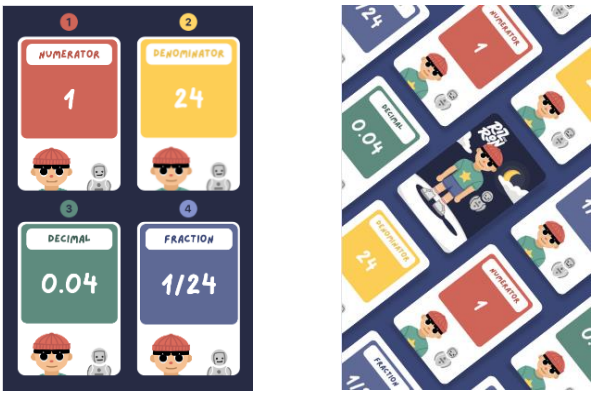

Figure 3. The Complete Family Number Set

D. Rules of the Find and Match Game Card

The rules of the games as below:

1. This game requires two (2) or more players to play.
2. The goal of this game is to find four (4) complete sets of family numbers which are (refer to Table 2):

Table 2. Topics of The Al-Khawarizmi Number Basis Module

Topic	Types of Family Numbers
Rational Numbers (Form 1)	• Integer Numerator • Integer Denominator • Fraction • Decimal
Factors and Multiples (Form 1)	• Numbers • Common Factors • Highest Common Factor • Lowest Common Multiples
Standard Form (Form 3)	• Decimal Numbers • Standard Form • 2 Significant Number • Integer Round Off

3. There are three (3) levels in this game card:
   - Easy
   - Medium
   - Hard
4. For Easy Level, players are not allowed to use any material such as pencil, scratch paper or calculator.
5. For Medium Level, players are allowed to calculate the given problems at scratch paper.
6. For Hard Level, players are allowed to use non-programmable scientific calculator.
7. Each level of the game card contains twenty-four (24) sets of cards.

E. Steps for playing the Find and Match Game Card

The steps of the games as below:

1. All cards are distributed randomly and equally between players.
2. Players must hide the front part (family number) of their cards from other players.
3. When the first player, namely player A, begins the game, he or she is required to call on any player, for example, player B, to request a card. Player A is required to say the desired number and card type for Player B.
4. If Player B has the named number card, then he or she must give the card to Player A, and Player A's turn will continue.
5. If Player B does not have the mentioned number card, then Player A's turn will end, and the next player will start playing.
6. The next player will repeat the same thing by asking or requesting a number card from another player.
7. If a player has a complete set of family number cards, the player can say "Complete Family Number Set,"

and the other players will confirm whether the set is correct or not.

8. If the set is correct, it must be placed next to the player. However, if the set is not correct, the player must take it again, and the player loses his next turn.
9. The player with the most complete set of family number cards will be announced as the winner.

III. RESULT AND DISCUSSION

Gifted and talented Muslim students who are weak in mathematics will be identified at Kolej PERMATA Insan. The students involved are given a focused intervention by following a series of workshops with the aim of strengthening and solidifying the knowledge of mathematics for gifted and talented Muslim students. Students will be divided into several groups consisting of students of various ages and levels. Mathematics teachers will be appointed as guidance teachers, and each group of students will be assigned a facilitator. Facilitators are students who have achieved excellent results in mathematics and are appointed by subject teachers. This effort is done according to a Hadith that has been narrated by Ahmad, Al-Thabrani, and Al-Daruqutni, which states that the best of humans is those who are most beneficial to others [13].

Al-Khawarizmi's Basis Number Module is the first proposed module that will be used for intelligent students who need focused intervention in Rational Numbers, Factors and Multiples, and Standard Form. Pupils are required to complete all the exercises and assignments found in this Al-Khawarizmi Basic Number Module throughout the workshop with the help of facilitators and mentor teachers.

In addition to that, students will also be tested with a game card named "Find and Match: Al-Khawarizmi Robot of Number (Riz and Ron)". This game card contains every topic found in the module, and the main purpose of this game given to the students is to see the student's understanding of the topics that have been discussed in this module. In this game, students must find a group of cards according to the objective of the content of each topic. Students must follow the game conditions that have been set, spend their cards fast, and they will be declared as winners. Figure 4 shows the complete procedure to finish the module.

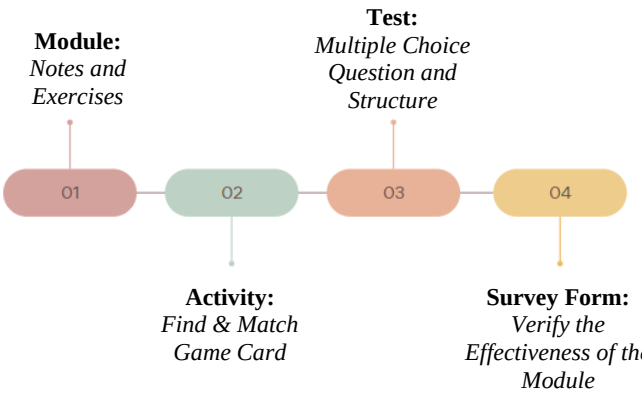

Figure 4. The Complete procedure to finish Al-Khawarizmi Number Basis Module

Tables 3, 4, and 5 show the complete family number set on the topic Rational Numbers for Easy, Medium, and Hard Levels (refer to Appendix A). These tables have four complete family number cards, which are numerator integers, denominator integers, fraction numbers, and decimal numbers.

Each level has its own level of restrictions during the game. For Easy Level, players are not allowed to use any materials such as pencils, scratch paper, or calculators. For Medium Level, players are allowed to calculate the given problems on scratch paper, while for Hard Level, players are allowed to use a non-programmable scientific calculator.

Tables 6, 7, and 8 show the complete family number set on the topic Factors and Multiples for Easy, Medium, and Hard Levels (refer to Appendix B). There are four complete family number sets: numbers, common factors, Highest Common Factor (HCF), and Lowest Common Multiples (LCM).

Tables 9, 10, and 11 show the complete family number set for the topic Standard Form for Easy, Medium, and Hard Levels (refer to Appendix C). There are four complete family number sets, which are decimal numbers, standard forms, two (2) significant numbers, and integer roundoffs.

IV. CONCLUSIONS

Mathematics education is supposed to help and guide students to understand mathematical concepts, processes, and techniques and develop the ability to solve a wide variety of mathematics problems [14]. Therefore, the Al-Khawarizmi Number Base module aims to improve mathematical knowledge among gifted and talented Muslim students at Kolej PERMATA Insan, Universiti Sains Islam Malaysia. The module will strengthen and solidify knowledge for students who struggle with mathematics, aiming to produce Muslim scholars who excel in the mathematical sciences [15] – [16]. There are also several verses from the Quran and Hadith mentioning the benefits for the people who follow a path to seek knowledge, one of them being the eleventh verse of Surah Al-Mujadalah from the Quran, which states that God will raise those who were given knowledge by degrees. Not only that, a hadith from Sahih Muslim numbered 2699 states that whoever follows a path to seek knowledge therein, God will make it easy for him to find a path to paradise. The effectiveness of this module will be analyzed to develop future-ready Muslim scholars, aligning with the Kolej PERMATA Insan Strategic Plan and Malaysian Education Blueprint (PPPM 2013–2025) [17].

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this paper.

ACKNOWLEDGEMENT

Kolej PERMATA Insan and Universiti Sains Islam Malaysia are gratefully acknowledged.

REFERENCES

[1] A. S. Safura and O. Norziah, "Matematik Dan Disseminasi Ilmu: Tinjauan Persepsi Pelajar Pengurusan,". *Proceeding of the 1st International Conference on Management and Muamalah*, pp. 220 – 225, 2014.

[2] M. Y. Yusminah, *Pengajaran Dan Pengintegrasian Komponen Pengetahuan Pedagogikal Isi Kandungan (PCK) Guru Dalam Algebra*. Tesis Doktor Falsafah, Fakulti Pendidikan, Universiti Kebangsaan Malaysia, 2012.

[3] M. Friend, *Special Education: Contemporary Perspectives for School Professionals*, 2nd ed. Boston: Allyn & Bacon, 2008.

[4] H. Steiner and M. Carr, "Cognitive Development in gifted Children: Toward a More Precise Understanding of Emerging Differences in Intelligence," *Educational Psychology Review*, vol. 15, pp. 215 – 246, 2003.

[5] S. Schiever and C. Maker, *New Directions in Enrichment and Acceleration. Handbook for Gifted Educatio*n, 3rd ed., Boston: Allyn & Bacon, 2003.

[6] A. R. Abdul Aziz, N. H. Ab Razak, R. P. Sawai, M. F. Kasmani, M. I. Amat and A. Al Haadi Shafie, "Exploration of Challenges Among Gifted and Talented Children". *Malaysian Journal of Social Sciences and Humanities*, Vol 6(4), pp. 242 – 251, 2021.

[7] Brualdi and C. Amy, *Multiple Intelligences: Gardner's Theory*. Alternative Assessment, Catholic University of America, Washington, 1996.

[8] L. Helding, "Howard Gardner's Theory of Multiple Intelligences". *Journal of Singing*, Vol 66(2), 2009.

[9] C. Brendan, "Affective Curriculum for Gifted Students in Malaysia: A Recommendation". *Journal for the Education of Gifted Young Scientists*, Vol 2(2), pp. 11 – 21, 2014.

[10] E. Zarpelon, L. M. Resende, and E. F. Reis, "Is Mathematical Back-Ground Crucial to Freshmen Engineering Students?". *International Conference on Interactive Collaborative Learning*, pp. 1031 – 1035, 2015.

[11] S. Barcelos and I. F. Silveira, "Teaching Computational Thinking Initial Series an Analysis of the Confluence Among Mathematics and Computer Sciences in Elementary Education and Its Implications for Higher Education". *Proceedings of the 37th Latin American Conference on Informatics*, pp. 1 – 8, 2012.

[12] M. Shawan, S. Osman and M. S. Abu, "Difficulties in Solving Non-Routine Problems: Preliminary Analysis and Results". *Academy of Science Malaysia AMC Science Journal*, Vol 16, 2021.

[13] Mu'jam Al-Awsat. *www.alkitab.com*. Retrieved April 30, 2019.

[14] M. H. M. Hafizi and N. Kamarudin, "Creativity in Mathematics: Malaysian Perspective". *Universal Journal of Educational Research*, Vol 8(3C) pp. 77 – 84, 2020.

[15] N. Subani, M. A. S. Mohd Nasrul and M. Z. Mohamad Shukri, "Enhance the Understanding of Gifted and Talented Muslims Student's on Quadratic Functions Using GeoGebra". *Insan Junior Researchers International Conference 2021*, Vol 2, pp. 88 – 94, 2021.

[16] N. Subani, M. A. S. Mohd Nasrul and M. Z. Mohamad Shukri, "Exploring Gifted and Talented Muslims Student's Performance Using Geogebra in Teaching and Learning Mathematics". *MALIM: Jurnal Pengajian Umum Asia Tenggara 22 (2021)*, pp. 308 – 315, 2021.

[17] Ministry of Education Malaysia (2013). Malaysia Education Blueprint 2013-2025. Preschool to Post-Secondary Education. Obtained from https://www.moe.gov.my/menumedia/media-cetak/penerbitan/dasar/1207-malaysia-education-blueprint-2013-2025/file.

APPENDIX A

Table 3. Complete Family Number Set: Rational Number (Easy)

Rational Number - Easy				
Group	**Card 1 Numerator**	**Card 2 Denominator**	**Card 3 Fractions**	**Card 4 Decimal**
G1	1	24	$\frac{1}{24}$	0.042
G2	-2	16	$-\frac{2}{16}$	-0.125
G3	3	5	$\frac{3}{5}$	0.600
G4	-8	22	$-\frac{8}{22}$	-0.364
G5	17	12	$\frac{17}{12}$	1.417
G6	-10	21	$-\frac{10}{21}$	-0.476
G7	19	11	$\frac{19}{11}$	1.727
G8	20	-9	$-\frac{20}{9}$	-2.222
G9	13	18	$\frac{13}{18}$	0.722
G10	-7	14	$-\frac{7}{14}$	-0.500
G11	23	15	$\frac{23}{15}$	1.533
G12	6	-4	$-\frac{6}{4}$	-1.500

Table 4. Complete Family Number Set: Rational Number (Medium)

Rational Number – Medium				
Group	**Card 1 Numerator**	**Card 2 Denominator**	**Card 3 Fractions**	**Card 4 Decimal**
G1	8	-22	$-\frac{3}{4}$	-0.364
G2	-9	5	$-\frac{9}{5}$	-1.800
G3	18	7	$\frac{18}{7}$	2.571
G4	34	6	$\frac{34}{6}$	5.667
G5	12	15	$\frac{12}{15}$	0.800
G6	7	13	$\frac{7}{13}$	0.538
G7	35	40	$\frac{35}{40}$	0.875
G8	13	18	$\frac{3}{5}$	0.722
G9	16	5	$\frac{16}{5}$	3.200
G10	1	3	$\frac{1}{3}$	0.333
G11	23	15	$-\frac{7}{10}$	1.533
G12	24	-25	$-\frac{24}{25}$	-0.960

Table 5. Complete Family Number Set: Rational Number (Hard)

Rational Number - Hard				
Group	**Card 1 Numerator**	**Card 2 Denominator**	**Card 3 Fractions**	**Card 4 Decimal**
G1	-40	6	$-\frac{40}{6}$	-6.667
G2	-39	2	$-\frac{39}{2}$	-19.500
G3	-35	28	$-\frac{35}{28}$	-1.250
G4	-27	16	$-\frac{27}{16}$	-1.688
G5	-21	5	$-\frac{21}{5}$	-4.200
G6	-28	12	$-\frac{28}{12}$	-2.333
G7	-20	12	$-\frac{20}{12}$	-1.667
G8	-18	12	$-\frac{18}{12}$	-1.500
G9	13	2	$\frac{13}{2}$	6.500
G10	23	4	$\frac{23}{4}$	5.750
G11	32	11	$\frac{32}{11}$	2.909
G12	32	21	$\frac{32}{21}$	1.523

APPENDIX B

Table 6. Complete Family Number Set: Factors And Multiples (Easy)

Factors and Multiples - Easy				
Group	**Card 1 Numbers**	**Card 2 Common Factors**	**Card 3 HCF**	**Card 4 LCM**
G1	12, 18	1, 2, 3, 6	6	36
G2	8, 16	1, 2, 4, 8	8	32
G3	12, 16	1, 2, 4	4	48
G4	4, 6	1, 2	2	12
G5	3, 15	1, 3	3	15
G6	5, 7	1	1	35
G7	4, 8	1, 2, 4	4	8
G8	7, 19	1	1	133
G9	8, 12	1, 2, 4	4	24
G10	9, 18	1, 3, 9	9	18
G11	10, 15	1, 5	5	30
G12	4, 10	1, 2	2	20

Table 7. Complete Family Number Set: Factors And Multiples (Medium)

Factors and Multiples - Medium				
Group	**Card 1 Numbers**	**Card 2 Common Factors**	**Card 3 HCF**	**Card 4 LCM**
G1	6, 21	1, 3	3	42
G2	8, 22	1, 2	2	88
G3	8, 24	1, 2, 4, 8	8	24
G4	10, 24	1, 2	2	120
G5	10, 25	1, 2, 5	5	50
G6	12, 26	1, 2	2	156
G7	12, 28	1, 2, 4	4	84
G8	14, 40	1, 2	2	280
G9	12, 24	1, 2, 3, 4, 6, 12	12	24
G10	18, 24	1, 2, 3, 6	6	72
G11	16, 24	1, 2, 4, 8	8	48
G12	16, 28	1, 2, 4	4	112

Table 8. Complete Family Number Set: Factors And Multiples (Hard)

Factors and Multiples - Hard				
Group	**Card 1 Numbers**	**Card 2 Common Factors**	**Card 3 HCF**	**Card 4 LCM**
G1	21, 30	1, 3	3	210
G2	22, 44	1, 2, 11, 22	22	44
G3	24, 36	1, 2, 3, 4, 6, 12	12	72
G4	24, 48	1, 2, 3, 4, 6, 8, 12, 24	24	48
G5	27, 36	1, 3, 9	9	108
G6	30, 45	1, 3, 5, 15	15	90
G7	33, 42	1, 3	3	462
G8	36, 42	1, 2, 3, 6	6	252
G9	28, 32	1, 2, 4	4	224
G10	27, 33	1, 3	3	297
G11	22, 33	1, 11	11	66
G12	42, 60	1, 2, 3, 6	6	420

APPENDIX C

Table 9. Complete Family Number Set: Standard Form (Easy)

Standard Form - Easy				
Group	**Card 1 Decimal Numbers**	**Card 2 Standard Form**	**Card 3 Two (2) Significant Number**	**Card 4 Integer Round Off**
G1	18.400	1.84×10^{1}	18	20
G2	182	1.82×10^{2}	180	180
G3	0.713	7.13×10^{-1}	0.71	1
G4	0.678	6.78×10^{-1}	0.68	1
G5	97.200	9.72×10^{1}	97	100
G6	86.700	8.67×10^{1}	88	90
G7	0.156	1.56×10^{-1}	0.16	0
G8	0.735	7.35×10^{-1}	0.74	1
G9	0.903	9.03×10^{-1}	0.90	1
G10	0.739	7.35×10^{-1}	0.74	1
G11	0.082	8.20×10^{-2}	0.082	0
G12	815	8.15×10^{2}	810	820

Table 10. Complete Family Number Set: Standard Form (Medium)

Standard Form - Medium				
Group	**Card 1 Decimal Numbers**	**Card 2 Standard Form**	**Card 3 Two (2) Significant Number**	**Card 4 Integer Round Off**
G1	72300	7.23×10^{4}	72000	72000
G2	8090	8.09×10^{3}	8100	8000
G3	73000	7.30×10^{4}	73000	73000
G4	3550	3.55×10^{3}	3600	3600
G5	82200	8.22×10^{4}	82000	82000
G6	4040	4.04×10^{3}	4000	4000
G7	64800	6.48×10^{4}	65000	65000
G8	0.00352	3.52×10^{-3}	0.0035	0
G9	0.000992	9.92×10^{-4}	0.00099	0
G10	66200	6.62×10^{4}	66000	66000
G11	0.000384	3.84×10^{-4}	0.00038	0
G12	7990	7.99×10^{3}	8000	8000

Table 11. Complete Family Number Set: Standard Form (Hard)

Standard Form - Hard				
Group	**Card 1 Decimal Numbers**	**Card 2 Standard Form**	**Card 3 Two (2) Significant Number**	**Card 4 Integer Round Off**
G1	295000	2.95×10^{5}	300000	300000
G2	497000	4.97×10^{5}	500000	500000
G3	0.0000519	5.19×10^{-5}	0.000052	0
G4	0.000033	3.30×10^{-5}	0.000033	0
G5	0.0000621	6.21×10^{-5}	0.000062	0
G6	0.0000644	6.44×10^{-5}	0.000064	0
G7	0.0000962	9.62×10^{-5}	0.000096	0
G8	0.0000606	6.06×10^{-5}	0.000061	0
G9	0.000079	7.90×10^{-5}	0.000079	0
G10	43.50000	4.35×10^{1}	44	40
G11	0.284000	2.84×10^{-1}	0.28	0
G12	0.998000	9.98×10^{-1}	1.0	1