4th Basic

5th Advanced

Helping With Math

USA GRADES

Prime Numbers

Suitable for students
aged 8-10

This pack is suitable for learners aged 8-10 years old or 4th and 5th graders (USA). The content covers fact files and relevant basic and advanced activities involving prime numbers.

- Celebrated primarily by Hindus, Sikhs, and Jains, ***Diwali*** or *Deepavali* is a major festival celebrated for five days during *Kartika* (usually falls between mid-October and mid-November).
- Also known as the festival of lights, *Diwali* is one of the major festivals of Hinduism. The celebration symbolizes the spiritual victory of light (goodness/knowledge) over darkness (evil/ignorance).
- It is closely associated with the goddess *Lakshmi*. For the believers, it was a religious, cultural, and seasonal festival.

PRIME NUMBERS

PRIME numbers are numbers which only have two factors: 1 and itself.

PRIME numbers can only be divided by *1* and *ITSELF.*

See the examples below:

is a prime number because it can only be divided by 1 and 2.

2 ÷ 1 = 2

2 ÷ 2 = 1

is a prime number because it can only be divided by 1 and 5

5 ÷ 1 = 5

5 ÷ 5 = 1

is a prime number because it can only be divided by 1 and 7

7 ÷ 1 = 7

7 ÷ 7 = 1

is a prime number because it can only be divided by 1 and 29

29 ÷ 1 = 29

29 ÷ 29 = 1

LIST OF PRIME NUMBERS

List of Numbers	Prime Numbers
Between 1 and 10	2, 3, 5, 7
Between 11 and 20	11, 13, 17, 19
Between 21 and 30	23, 29
Between 31 and 40	31, 37
Between 41 and 50	41, 43, 47
Between 51 and 100	53, 59, 61, 67, 71, 73, 79, 83, 89, 97

Properties of Prime Numbers

- A prime number is a whole number greater than 1.
- It has exactly two factors: 1 and the number itself.
- The only even prime number is 2.
- Any two prime numbers are always co-prime to each other.
- Every number can be expressed as the product of prime numbers.

TRIVIA: If a number is not prime, it is a COMPOSITE NUMBER!

A **composite number** is a number greater than 1 that has more than two factors.

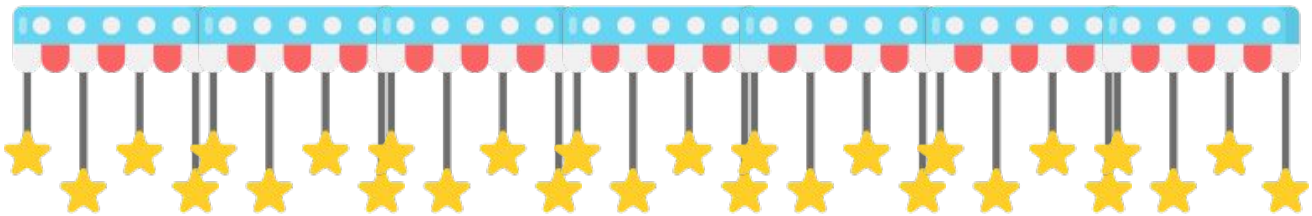
TABLE OF ACTIVITIES

Ages 8-9 (Basic)	4th Grade
1	The Festival of Lights
2	Lighting of Diyas
3	Welcome Goddess Lakshmi
4	Save Sita
5	Happy Diwali
Ages 9-10 (Advanced)	5th Grade
6	Let's Decorate Rangoli
7	Dhanteras Errand
8	Prime-Works
9	Gifts and Golds
10	A Bright and Colorful Festival

THE FESTIVAL OF LIGHTS

G4
Basic

Celebrate Diwali with our Hindu brothers and sisters! Do that by putting a check in the box that contains a prime number.



27

81

56

47

19

43

42

6

5

21

LIGHTING OF DIYAS

G4
Basic

Lit these *diyas* after you have verified if the following statements are TRUE about prime numbers. Use a yellow-orange color to indicate that the statement is TRUE. Otherwise, replace the underlined word/phrase to correct it.

1. Prime numbers are numbers which only have two factors: <u>1 and itself.</u>

2. The prime numbers between 1 and 10 are 2<u>,</u> <u>3, 5, 7, and 9.</u>

3. The only even prime number is <u>2.</u>

4. If a number is not prime, it is a <u>composite number.</u>

5. There are <u>three</u> prime numbers between 41 and 50.

6. <u>23 and 29</u> are the only prime numbers between 21 and 30.

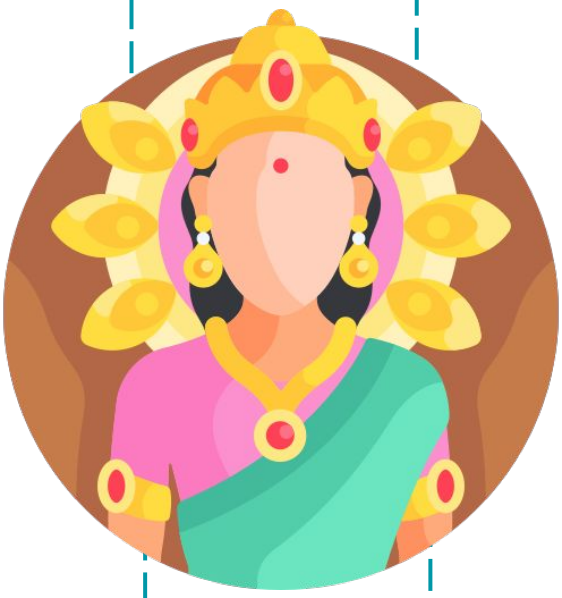
WELCOME, GODDESS LAKSHMI

G4
Basic

Welcome Goddess Lakshmi at your house by listing down the prime numbers given the following range of values.

From 1 - 15

From 16 - 30



From 31 - 50

From 51 - 80

FACT: *In celebrating Diwali, the first day, known as Dhanteras, is dedicated to cleaning homes and purchasing small items of gold. Lakshmi, the goddess of wealth, is the focus of worship on that day.*

SAVE SITA

G4
Basic

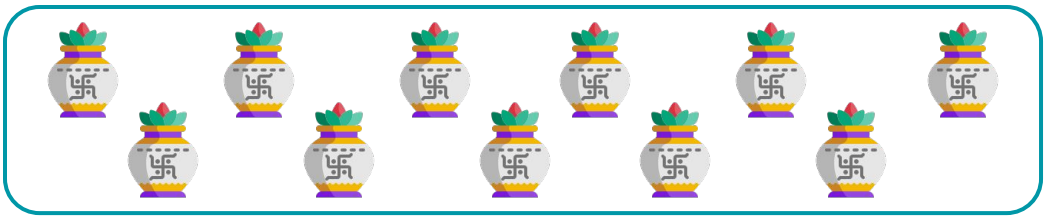
Make a number path to help Rama save Sita by shading all the composite numbers.

4	98	7	5	3	2	11	11	13
17	6	10	8	6	18	23	29	31
37	41	43	47	53	9	59	61	67
78	15	18	14	12	84	89	73	71
16	83	97	3	17	23	47	59	97
4	20	25	21	13	43	53	11	11
61	71	97	100	24	22	28	10	3
11	3	17	41	11	31	13	30	27
73	59	43	2	71	19	37	61	26
29	11	5	19	7	3	11	2	32
73	83	2	11	17	29	47	59	35
71	11	3	13	19	37	100	48	50
61	11	83	5	17	97	65	5	11
2	71	3	73	7	19	88	29	5
77	54	66	88	90	57	100	89	59

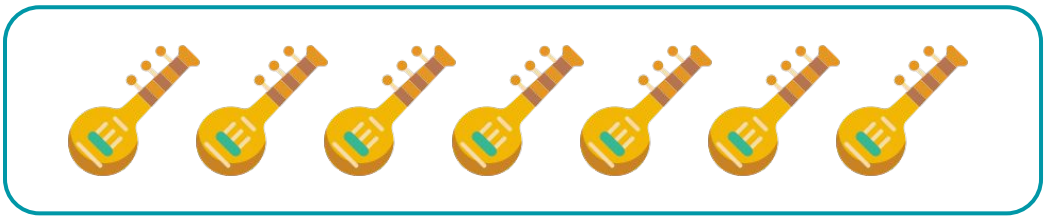
HAPPY DIWALI!

G4
Basic

These are some of the things that you commonly see during Diwali. Count the number of pictures in each box. Encircle C if it is a composite number and P if it is a prime number.

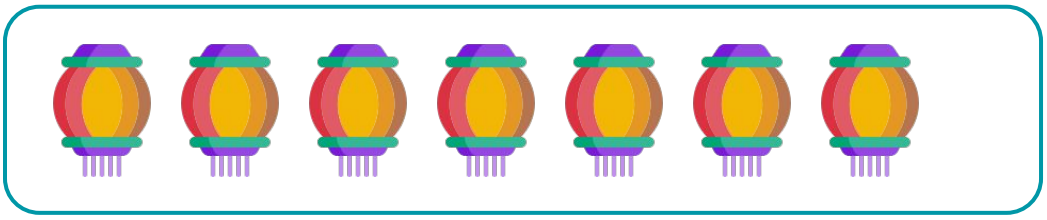


C	P



C	P

C	P



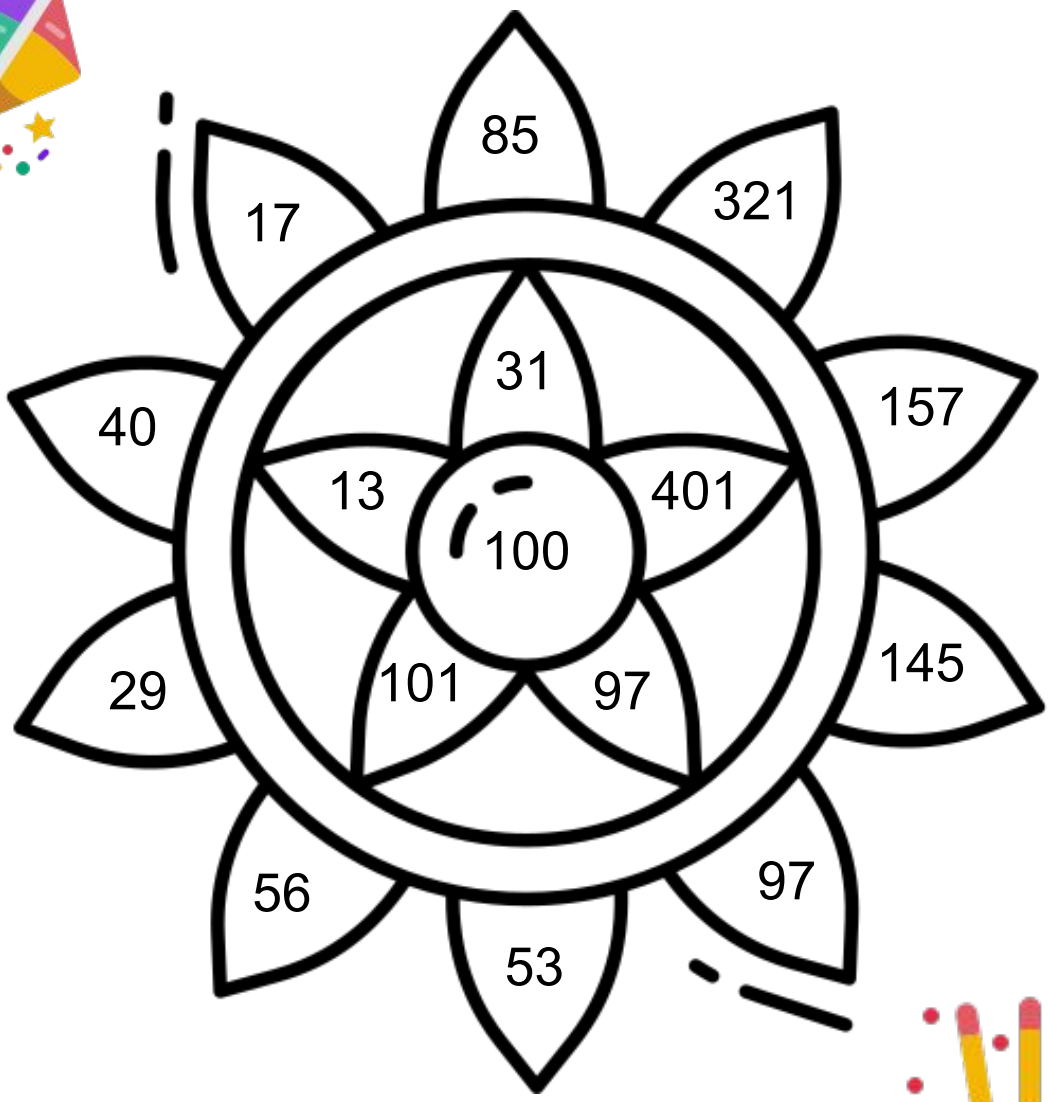
C	P

C	P

DECORATING RANGOLI

G5 Advanced

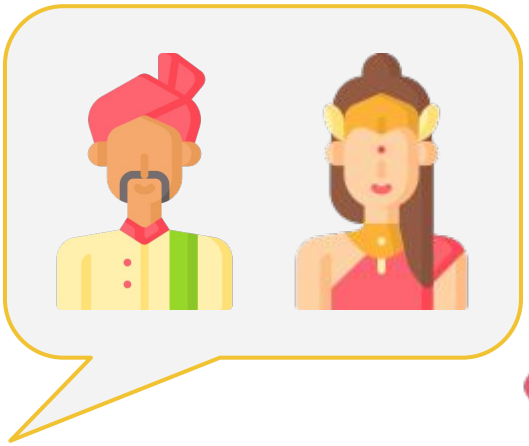
Decorate your own *rangoli* by coloring prime and composite numbers. Use two color combinations only. The first color is for prime while the second color is for composite.



DHANTERAS ERRAND

G5 Advanced

Help this Hindu family clean their house today of Dhanteras so that *Lakshmi* will visit and give them prosperity. Do that by answering these challenging questions.



My value is less than 100. You will know me if you get the product of three different non-composite numbers. Just give one answer. Who am I?

I am a product of two consecutive prime numbers. When you get their sum, it will result to 30. Who am I?

PRIME-WORKS

G5 Advanced

Fireworks are believed to be capable of pushing away bad luck and evil spirits. Enjoy the colorful fireworks this Diwali while completing the table below.

Number	Factors	Prime / Composite
150		
167		
211		
258		
351		
500		
517		

GIFTS AND GOLDS

G5 Advanced

Receive gifts and golds this Festival of Lights by expressing the following numbers using their prime factors.

441

720

990

A BRIGHT AND COLORFUL FESTIVAL

G5 Advanced

As we celebrate the beauty of Diwali, let us use this opportunity to reflect on our learnings about prime numbers. Answer the following questions briefly.

1. How do prime and composite numbers differ?

2. Why is it that 1 is not the smallest prime number?

3. How will you express 1000 using prime factorization?

ANSWER GUIDE

Activity 1

The prime numbers are 5, 43, 19, and 47 only.

Activity 2

1. TRUE	2. 2, 3, 5, and 7	3. TRUE
4. TRUE	5. TRUE	6. TRUE

Activity 3

From 1-15: 2, 3, 5, 7, 11, 13
From 16-30: 17, 19, 23, 29
From 31-50: 31, 27, 41, 43, 47
From 51- 80: 53, 59, 61, 67, 71, 73, 79

Activity 5

1. P 2. P 3. C 4. P 5. P

Activity 6

The prime numbers are: 17, 29, 53, 97, 157, 13, 31, 101, 97, 401.
The composite numbers are: 85, 40, 56, 145, 321, 100.

Activity 7

1. Possible answers are: (2,3,5) (2,5,7) (2,3,7) (2,3,11)
2. The two prime numbers are 13 and 17. Their product is 221.

ANSWER GUIDE

Activity 8

1. 150 = 1, 2, 3, 5, 6, 10, 15, 25, 30, 50, 75, and 150. COMPOSITE
2. 167 = 1, 167 PRIME
3. 211 = 1, 211 PRIME
4. 258 = 1, 2, 3, 6, 43, 86, 129, 258 COMPOSITE
5. 351 = 1, 3, 9, 13, 27, 39, 117 and 351. COMPOSITE
6. 500 = 1, 2, 4, 5, 10, 20, 25, 50, 100, 125, 250, and 500 COMPOSITE
7. 517 = 1, 11, 47 and 517. COMPOSITE

Activity 9

441 = 3 × 3 × 7 × 7
720 = 2 × 2 × 2 × 2 × 3 × 3 × 5
990 = 2, 3, 5, 11.

Activity 10

1. Prime numbers have factors that are only limited to 1 and the number itself while composite numbers have factors other than one and the number itself.
2. 1 is not a prime number because it does not satisfy the definition of a prime number.
3. 1000 = 2x2x2x5x5x5

ANSWER GUIDE

Activity 4

4	98	7	5	3	2	11	11	13
17	6	10	8	6	18	23	29	31
37	41	43	47	53	9	59	61	67
78	15	18	14	12	84	89	73	71
16	83	97	3	17	23	47	59	97
4	20	25	21	13	43	53	11	11
61	71	97	100	24	22	28	10	3
11	3	17	41	11	31	13	30	27
73	59	43	2	71	19	37	61	26
29	11	5	19	7	3	11	2	32
73	83	2	11	17	29	47	59	35
71	11	3	13	19	37	100	48	50
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2	71	3	73	7	19	88	29	5
77	54	66	88	90	57	100	89	59

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