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**PURDUE GLOBAL**  
UNIVERSITY®

# A Team Mission: Online Team Discussions in Math

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PURDUE UNIVERSITY GLOBAL,  
SCHOOL OF GENERAL EDUCATION,  
MATHEMATICS DEPARTMENT  
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# Research

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- Group work is an essential tool for students' future lives and, therefore, a key component of the online classroom (Morgan et al., 2014)
- Higher education institutions are paying more attention to the development of students' communicative abilities and critical thinking.(Rezaei, 2017)
- Online group work can be complicated because of its asynchronous characteristics and lack of physical presence, and its requirements for skills in handling technology, human relationships, and content-related tasks (Chang et al. 2016)
- To motivate students' interest in group work, instructors need to point out the benefits of group work... the team spirit and teamwork skills group members can develop, such as communication, leadership, shared vision, and negotiation (Jackson et al., 2014).



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# Recommendations

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- Structure task to allow for a climate of collaboration and true engagement
- Create preliminary assignment
- Assign roles or allow choices
- Make participation by group members visible
- Individualize grades

# The Creation of a MATH Team Discussion

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## Independent Portions

- No need to wait for or rely on other group members to post
- Collect all individual portions at the end of the week into one post to represent a group presentation

## Small groups

- Give more options than max team members
- Freedom to choose something that interests the student - the earlier in the week they post, the more options

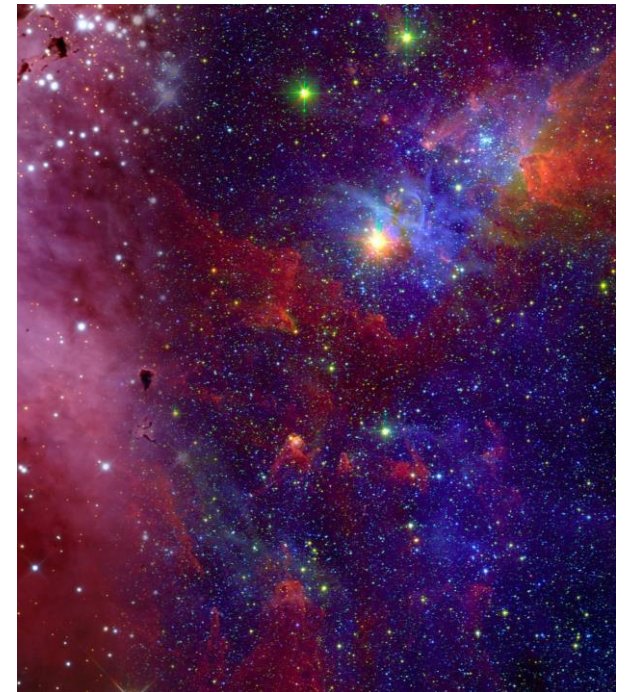


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# MM150 Survey of Math Team Discussion

Build a new home for a needy family

- Team selects floor plan
- Each team member chooses materials and finds cost
  - Bedroom Flooring
  - Main Living Area Flooring
  - Bedroom Walls
  - Main Living Area Walls
  - Bedroom Crown Molding
  - Main Living Area Crown Molding
  - Exterior Gutters
  - Roofing
- Teammate chooses different material and finds cost
- Summary

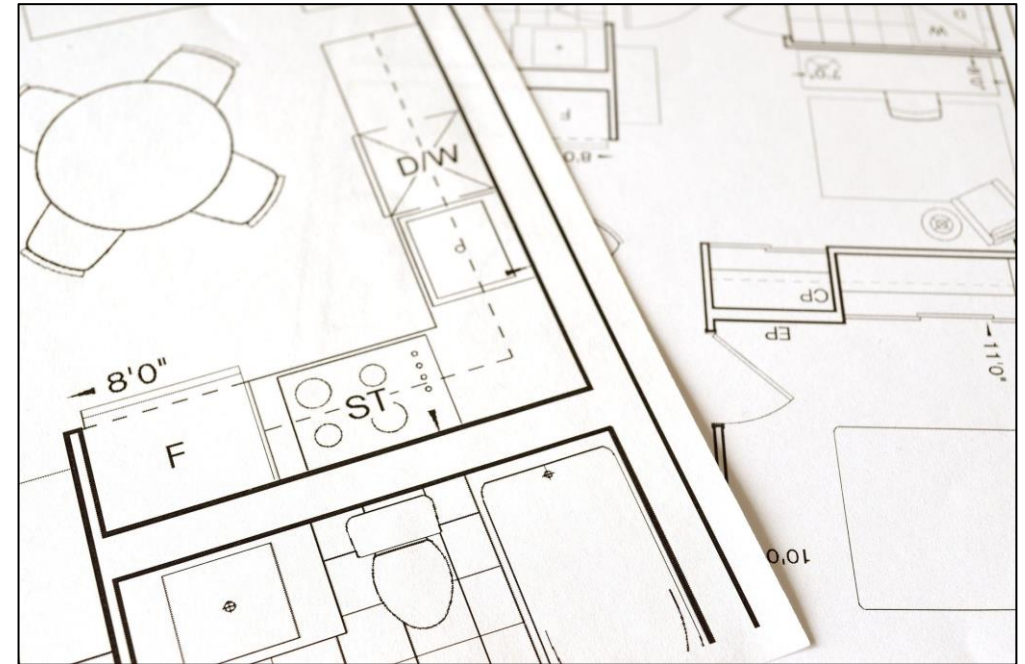


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# MM212 College Algebra Team Discussion

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## Secret Spy Team

- Team chooses a coding function
- Each member encodes one detail
  - Location
  - Where to Be
  - Time
  - What to Bring
  - What to Wear
  - What to Do
  - Password to Say
  - Password to Reply
- Classmate decodes message
- Summary



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Numerical Look-Up Table:

A	1
B	2
C	3
D	4
E	5
F	6
G	7
H	8
I	9
J	10
K	11
L	12
M	13
N	14
O	15
P	16
Q	17
R	18
S	19
T	20
U	21
V	22
W	23
Y	24
X	25
Z	26
SPACE	27

# Let's have a Potluck! CODING a message

What FOOD can YOU bring to the potluck?

Coding function;  $f(x) = 2x$

**Example:**

- 1) Write out your food item.
- 2) Make the letters into numbers
- 3) Encrypt each number

double each letter  $f(x) = 2x$ .

Image by [jinsoo.jang](#) from [Pixabay](#)



C O O K I E S

3 15 15 11 9 5 19

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C	O	O	K	I	E	S
---	---	---	---	---	---	---

3	15	15	11	9	5	19
---	----	----	----	---	---	----

6	30	30	22	18	10	38
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# Potluck Picnic Time

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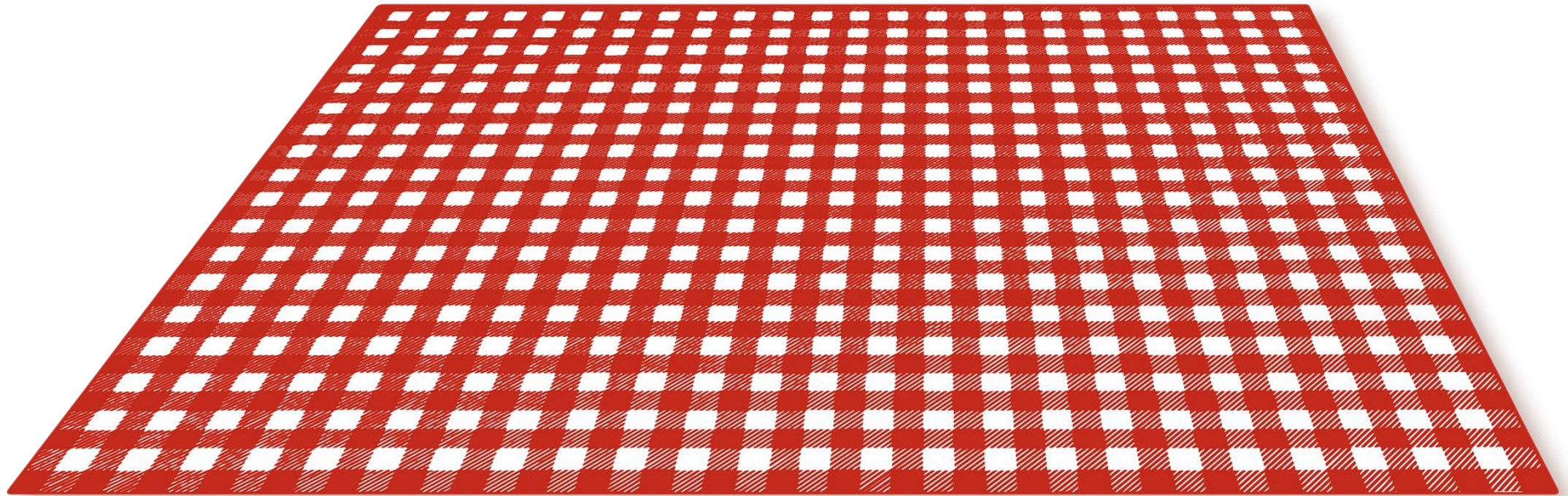


Image by [Please Don't sell My Artwork AS IS](#) from [Pixabay](#)

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# Let's have a Potluck!

## DECODING a message

What FOOD can YOU bring to the potluck?

Decoding function;  $g(x) = \frac{x}{2}$

**Example:**

3) Write out the secret encrypted message.

2) Decrypt each number

- Divide each number by 2,  $g(x) = \frac{x}{2}$

1) Make the numbers into letters

Image by [jinsoo.jang](#) from [Pixabay](#)



6	30	30	22	18	10	38
---	----	----	----	----	----	----

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Image by [jinsoo.jang](#) from [Pixabay](#)

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# Group Discussion Survey

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- Do small-group discussion forums increase interaction?
- Do small-group discussion forums decrease anxiety?
- Do small-group discussion forums foster engagement?

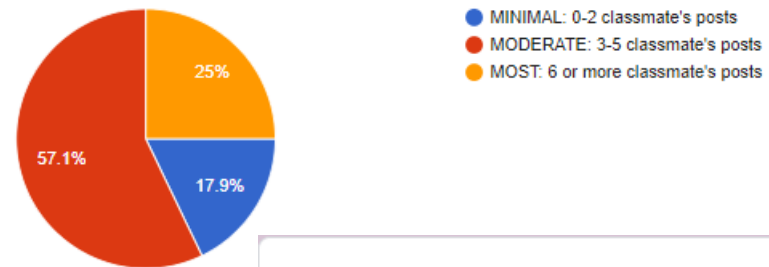


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# Interaction

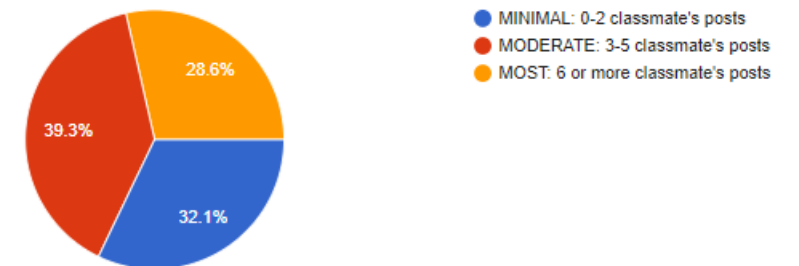
In general, how many of your classmate's posts do you read in a typical discussion forum?

28 responses



For Unit 6's Group Discussion how many of your classmate's posts did you read in a typical discussion forum?

28 responses



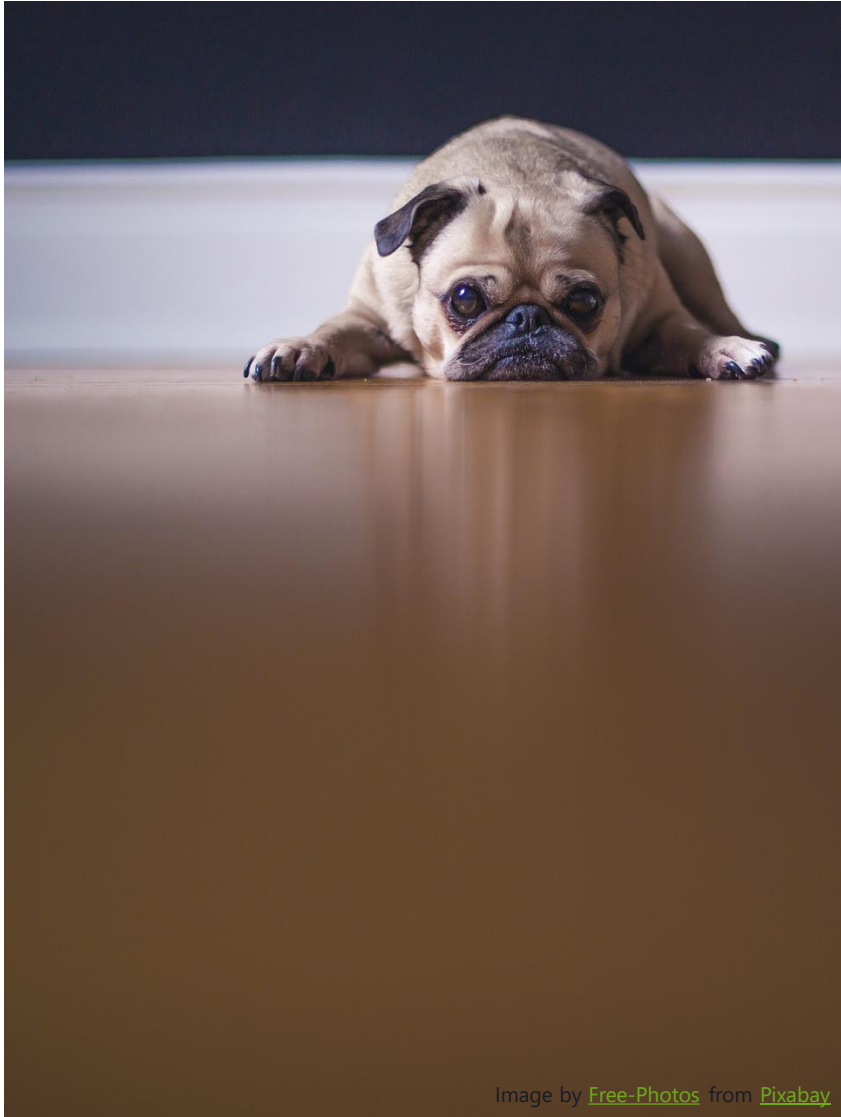
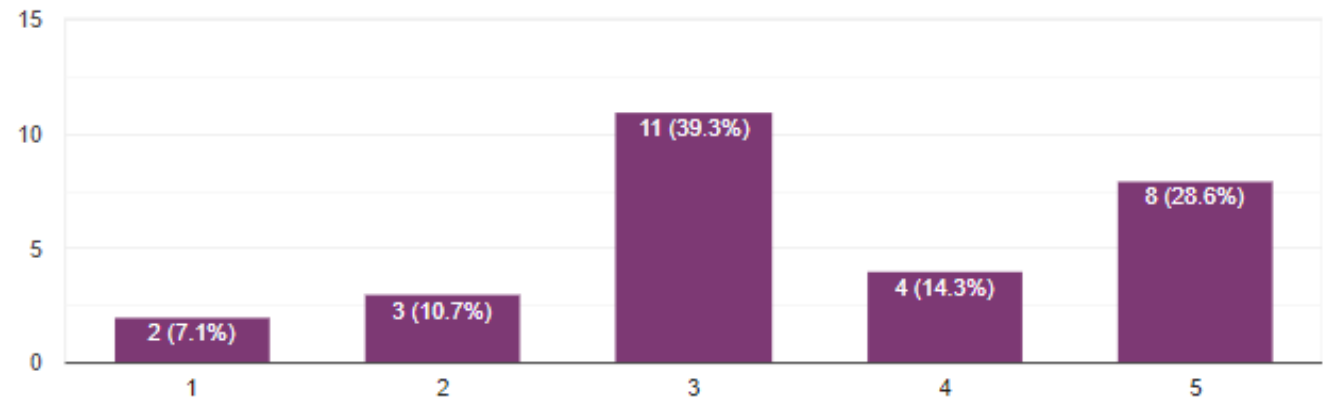


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# Anxiety

Did you feel more/less comfortable when participating in a discussion with fewer people involved (i.e. 4-7 others in your group)?

28 responses



1 represents least comfortable and 5 is most comfortable

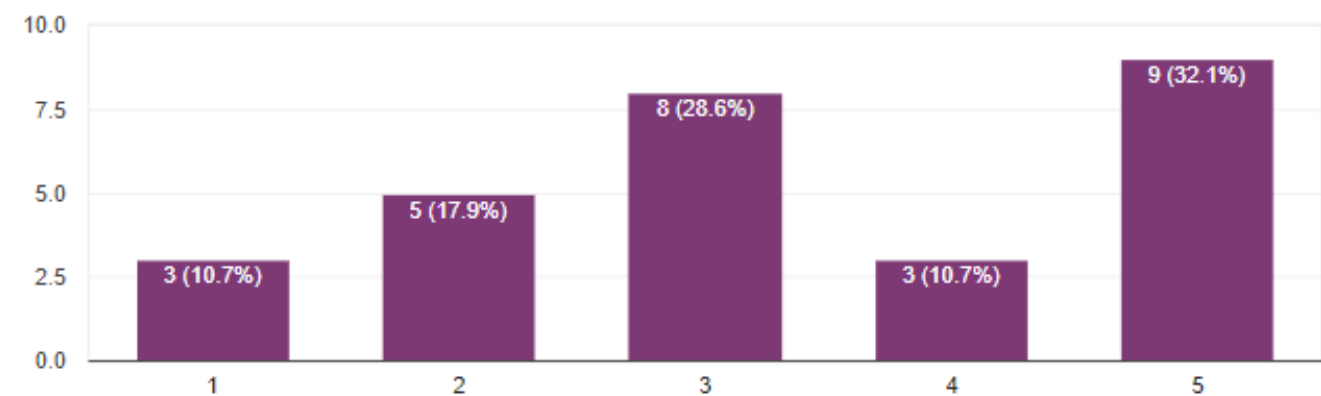


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# Engagement

Were you more/less interested in participating in a discussion with fewer people involved (i.e. 4-7 others in your group)?

28 responses



1 represents least interested and 5 is most interested

# What We've Learned...

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## **Students:**

- Don't like to wait on others!
- Annoyance that others weren't engaged.
- More structure.



## **Faculty:**

- Students complain.
- More structure.

# Selected References

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- Blackmon, S. J. (2012). Outcomes of Chat and Discussion Board Use in Online Learning: A Research Synthesis. *Journal of Educators Online*. Vol (9)2.
- Chang, B.m Kang, H. (2016). Challenges facing group work online. *Distance Education*. Vol 27(1), pp. 73-88.
- Jackson, D., Hickman, L. D., Power, T., Disler, R., Potgieter, I., Deek, H., & Davidson, P. M. (2014). Small group learning: Graduate health students' views of challenges and benefits. *Contemporary Nurse*, 48, 117–128.doi:/10.1080/10376178.2014.11081933
- Morgan, K., Williams, K.C., Cameron, B.A., Wade, C.E. (2014). Faculty Perceptions of Online Group Work. *The Quarterly Review of Distance Education*. Vol 15(4), pp. 37-41.
- Illera, J. L. (2001). Collaborative environments and task design in the university. *Computers in Human Behavior*. 17, 481–493.
- Rezaei, A. R. (2018). Effective Groupwork Strategies: Faculty and Students' Perspectives. *Journal of Education and Learning*. Vol 7(5), pp. 1-10.doi:10.5539/jel.v7n5p1



# Thank You!

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