

LESSON
11.3**Investigating Algebra Activity:**
Combinations*For use before the lesson "Find Probabilities Using Combinations"***Materials:** paper, pencil**QUESTION****Eight people pair up to do a presentation. How many different pairs are possible?****EXPLORE****Find the number of different pairs.****STEP 1** Make a list

Call the eight people A, B, C, D, E, F, G, and H. List all the possible pairs of 2 letters. Be sure to use an organized method.

AB	AC	AD	AE	AF	AG	AH
BA	BC	BD	BE	BF	BG	BH
CA	CB	CD	CE	CF	CG	CH
DA	DB	DC	DE	DF	DG	DH
EA	EB	EC	ED	EF	EG	EH
FA	FB	FC	FD	FE	FG	FH
GA	GB	GC	GD	GE	GF	GH
HA	HB	HC	HD	HE	HF	HG

STEP 2 Eliminate duplicates

Because order is not important when two people pair up, cross out any duplicate pairs.

AB	AC	AD	AE	AF	AG	AH
BA	BC	BD	BE	BF	BG	BH
CA	CB	CD	CE	CF	CG	CH
DA	DB	DC	DE	DF	DG	DH
EA	EB	EC	ED	EF	EG	EH
FA	FB	FC	FD	FE	FG	FH
GA	GB	GC	GD	GE	GF	GH
HA	HB	HC	HD	HE	HF	HG

STEP 3 Count the remaining pairs

There are 28 pairs remaining.

So, when eight people pair up, 28 different pairs are possible.

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CONCLUSIONS**Use your observations to complete these exercises.**

- How many different pairs are possible when 12 people pair up?
- Write an inequality for the number of different pairs that are possible when 10 people pair up.