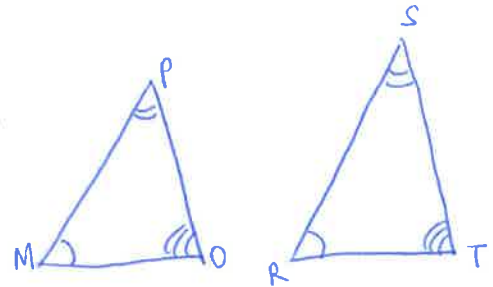**LEARNING TARGETS**
- I can identify corresponding parts of congruent triangles.
- I can use CPCTC to prove sides and angles are congruent in triangles.

Given $\triangle MPO \cong \triangle RST$, complete the following statements:

1. $\angle P \cong \angle$ __S__
2. $\angle T \cong \angle$ __O__
3. $\angle R \cong \angle$ __M__

4. $\overline{MO} \cong$ __$\overline{RT}$__
5. $\overline{SR} \cong$ __$\overline{PM}$__
6. $\overline{ST} \cong$ __$\overline{PO}$__

When you know triangles are congruent, and you state that corresponding parts are congruent (like you just did when you answered questions 1 – 6 above), you are using a property called **CPCTC**, which is a quick and easy way of saying :

C _corresponding_

P _parts of_

C _congruent_

T _triangles are_

C _congruent_
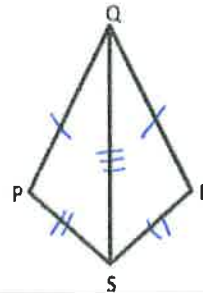
* once you have proven 2 △'s are ≅ using SSS, SAS, ASA, AAS or HL, any other pairs of angles / sides are ≅ using CPCTC

Example 1 :

Given : $\overline{PQ} \cong \overline{QR}$, $\overline{PS} \cong \overline{SR}$

Prove : $\angle PQS \cong \angle RQS$ * angles: use CPCTC in the proof

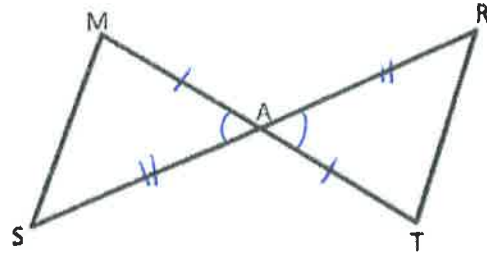| Statements	Reasons
1. $\overline{PQ} \cong \overline{QR}$	1. Given
2. $\overline{PS} \cong \overline{SR}$	2. Given
3. $\overline{QS} \cong \overline{QS}$	3. Reflexive Property
4. $\triangle PQS \cong \triangle RQS$	4. SSS
5. $\angle PQS \cong \angle RQS$	5. CPCTC

Example 2 :

Given : A is the midpoint of $\overline{MT}$

A is the midpoint of $\overline{SR}$

Prove : ∠M ≅ ∠T * angles:
use CPCTC

Statements	Reasons
1. A is the midpoint of $\overline{MT}$	1. Given
2. $\overline{MA} \cong \overline{TA}$	2. Definition of Midpoint
3. A is the midpoint of $\overline{SR}$	3. Given
4. $\overline{SA} \cong \overline{RA}$	4. Definition of Midpoint
5. ∠MAS ≅ ∠TAR	5. Vertical Angles Theorem
6. ΔMAS ≅ ΔTAR	6. SAS
7. ∠M ≅ ∠T	7. CPCTC

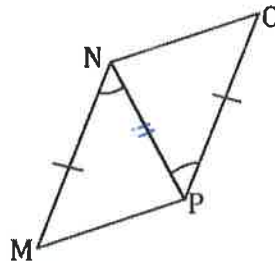**Example 3 :**

Given : ∠MNP ≅ ∠OPN

$\overline{MN} \cong \overline{OP}$

Prove : $\overline{MP} \cong \overline{NO}$ * sides:
use CPCTC

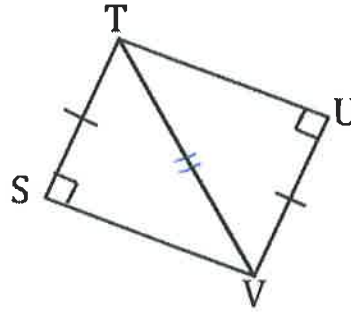| Statements	Reasons
1. ∠MNP ≅ ∠OPN	1. Given
2. $\overline{MN} \cong \overline{OP}$	2. Given
3. $\overline{NP} \cong \overline{NP}$	3. Reflexive Property
4. ΔMNP ≅ ΔOPN	4. SAS
5. $\overline{MP} \cong \overline{NO}$	5. CPCTC

Example 4 :

Given : $\overline{ST} \cong \overline{UV}$

∠TSV and ∠VUT are right angles

Prove : ∠SVT ≅ ∠UTV *angles: use CPCTC

Statements	Reasons
1. $\overline{ST} \cong \overline{UV}$	1. Given
2. <TSV and <VUT are right angles	2. Given
3. ΔTSV and ΔVUT are right triangles	3. Def. of right triangle
4. $\overline{TV} \cong \overline{TV}$	4. Reflexive Property
5. ΔTSV ≅ ΔVUT	5. HL
6. <SVT ≅ <UTV	6. CPCTC

Example 5 :

Given : $\overline{AB} \parallel \overline{DE}$
C is the midpoint of $\overline{BD}$

Prove : $\overline{AC} \cong \overline{EC}$ *Sides: use CPCTC
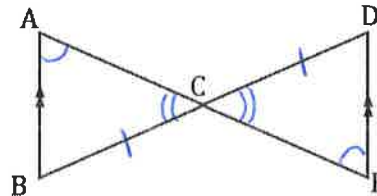
Statements	Reasons
1. $\overline{AB} \parallel \overline{DE}$	1. Given
2. ∠CAB ≅ ∠CED	2. Alt. Int. Angles Thm
3. C is the midpoint of $\overline{BD}$	3. Given
4. $\overline{BC} \cong \overline{DC}$	4. Definition of Midpoint
5. ∠ACB ≅ ∠ECD	5. VAT
6. ΔBAC ≅ ΔEDC	6. AAS
7. $\overline{AC} \cong \overline{EC}$	7. CPCTC