

Ngā Whāinga Paetae: Te Tau, Taumata 4

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4.1 (Mātauranga Tau)

Ka mōhio ki: ngā meka whakawehe matua; te whakaawhiwhi tauoti, tau ā-ira hoki.

4.2 (Mātauranga Tau)

Ka mōhio ki ngā tikanga o: te tau tōraro me te tau tōrunga; te tau toitū; te ōwehenga; te uara tū o ngā tau ā-ira; te maha o ngā haumano, ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau ā-ira (tae atu kia 3 ngā mati ā-ira).

4.3 (Mātauranga Tau)

Ka mōhio ki te kimi mai i ngā taurea me ngā tauwehe o tētahi tau.

4.4 (Mātauranga Tau)

Ka mōhio ki ngā hautau, ngā tau ā-ira, ngā ōrau me ngā ōwehenga māmā: ngā huringa hautau ↔ tau ā-ira ↔ ōrau; ngā raupapa tatauranga tau ā-ira (haumano, haurau, hautekau); te raupapa hautau, tau ā-ira, ōrau hoki; te whiriwhiri hautau ōrite.

4.5 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaoti rapanga e whai wāhi mai ana te tauoti, te hautau, te tau ā-ira, te ōrau, te ōwehenga, te tau tōpū me te taupū māmā: rautaki tatau; rautaki tāpiripiri; rautaki whakarea; rautaki pānga riterite māmā.

4.6 (Rautaki Tau)

Ka mārāma ki te whaitakenga o te otinga o tētahi rapanga.

Ngā Whāinga Paetae: Te Tau, Taumata 5

5.1 (Mātauranga Tau)

Ka mōhio ki ngā tikanga o te taupū me te tānga ngahuru.

5.2 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaoti rapanga e whai wāhi mai ana te tau tōpū, te hautau, te tau ā-ira, te ōrau, te ōwehenga, te pāpātanga me te taupū: rautaki tatau; rautaki tāpiripiri; rautaki whakarea; rautaki pānga riterite.

5.3 (Rautaki Tau)

Ka whiriwhiri, ka whakamahi tauwehe pātahi, taurea pātahi hoki.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka mōhio ki te raupapatanga whakamua, whakamuri, mawhiti-haumano, mawhiti-haurau, mawhiti hautekau, mawhiti-tahi, mawhiti-tekau, mawhiti-rau, mawhiti-mano, ahakoa te tau ā-ira tīmatanga.	<i>TPT, Pukapuka 4:</i> <ul style="list-style-type: none"> • Tātaitai (wh.15) • Kōwhiwhiu Tau (wh.36) • He Whare Uara Tū (wh.38) • Te Hautanga ā-Ira (wh.63)
Ka mōhio ki te tau, he haumano, he haurau, he hautekau, he tahi, he tekau, he rau, he mano rānei, te rahinga ake, te itinga ake rānei, i tētahi tau.	<i>TPT, Pukapuka 4:</i> <ul style="list-style-type: none"> • Tatau Māwhitiwhiti i te Rārangi Tau (wh.8) • Te Tau ki Mua, te Tau ki Muri (wh.13) • Kōwhiwhiu Tau (wh.36)
Ka raupapa hautau, tau ā-ira, ōrau hoki.	<i>TPT, Pukapuka 4:</i> <ul style="list-style-type: none"> • Raupapahia (wh.17) • He Aho Pirepire (wh.23) • Kei a Wai te Keke Nui? (wh.42) • He Nui Ake te Hauwhā i te Haurua! (wh.44)

	<ul style="list-style-type: none"> • Ko Wai ka Toa (wh.48) • Te Raupapa Hautau (wh.49) • He Pākete Rare (wh.60) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Ngā Ākinga a te Tai (wh.8) 	
Ka mōhio ki te maha o ngā haumano, ngā haurau me ngā hautekau kei roto i ngā tau ā-ira (tae atu kia 3 ngā mati ā-ira).	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Te Tikanga Nui o te Kore (wh.69) • Whakawhitia ngā Paparanga Uara Tū (wh.88) 	
Ka mōhio ki te whakarea tauoti, tau ā-ira rānei ki tētahi taupū o te 10.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Huria te Tau (wh.87) • He Mati Nukunuku (wh.95) 	
Ka whakaawhiwhi tau ā-ira ki te rau, te tekau, te tahi, te hautekau, te haurau rānei e pātata ana.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whakaawhiwhia ki te Tekau (wh.94) 	
Ka mōhio ki ngā huringa hautanga: hautau ↔ tau ā-ira ↔ ōrau mō ngā hautanga e tino whakamahia ana, pērā i te hauwaru, te hautekau me ngā hau-rua tekau.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Hautanga Ōrite (wh.51) • Te Whakaawhiwhi Hautau hei Ōrau (wh.52) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Huripokia (wh.10) 	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
<p>Ka tautohu i ngā tauwehe pātahi hei whiriwhiri ōwehenga ōrite. Ka huri ōwehenga hei hautau, hei ōrau hoki. Hei tauira:</p> <p>16:48 = 2:6 = 1:3 (he tauwehe pātahi te 8 me te 16) 1:2 ↔ $\frac{1}{3}$ = 33$\frac{1}{3}$ %</p>	<p>Ko ngā ranunga wai ārani hei horopaki:</p> <p>6:9 = 16:24 = 2:3 6:9 ↔ $\frac{2}{3}$ = 40%</p> <p>8:24 = 12:36 = 1:3 8:24 ↔ $\frac{8}{32} = \frac{1}{4}$ = 25%</p> <p>20:12 = 45:27 = 5:3 20:12 ↔ $\frac{20}{32} = \frac{5}{8}$ = 62.5%</p> <p>9:12 = 3:4 = 15:20 9:12 ↔ $\frac{9}{21} = \frac{3}{7}$ = 42.86%</p> <p>28:35 = 4:5 28:35 ↔ $\frac{28}{63} = \frac{4}{9}$ = 44.4%</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Ngā kōrero whakataki mō te Kaupae 7-8 (wh.93) • Ringa Tītere Hikohiko (wh.98) • Ranunga Peita Hikohiko (wh.105)
<p>Ka tāpiri, ka tango hautau e whai wāhi mai ana te tau hanumi me te tauraro rerekē. Hei tauira:</p> <p>$\frac{2}{3} + \frac{3}{4} = \frac{17}{12} = 1\frac{5}{12}$</p>	<p>$\frac{3}{5} + \frac{2}{3} = \frac{19}{15} = 1\frac{4}{15}$</p> <p>$\frac{7}{8} - \frac{5}{12} = \frac{11}{24}$</p> <p>$\frac{3}{8} + \frac{5}{6} = \frac{29}{24} = 1\frac{5}{24}$</p> <p>$\frac{14}{10} - \frac{3}{4} = \frac{13}{20}$</p> <p>$\frac{3}{4} + \frac{3}{7} = \frac{33}{28} = 1\frac{5}{28}$</p> <p>$\frac{7}{3} - \frac{7}{11} = \frac{56}{33} = 1\frac{23}{33}$</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Hautau Tāpiripiri, Hautau Tangotango (wh.111)

<p>Ka whakaoti rapanga e whai wāhi mai ana te whakarea hautau, me te whakawehe tauoti ki te hautau.</p> <p>Ka mōhio ki te tikanga, ina whakawehea tētahi tau ki te hautau iti ake i te kotahi, he nui ake te otinga i te tau tīmatanga.</p> <p>Hei tauira: $4 \div \frac{2}{3} = \frac{12}{3} \div \frac{2}{3} = 6$</p>		<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakawehe Hautau Uaua (wh.64) • He Whakanui, he Whakaiti rānei te Whakawehe? (wh.70)
<p>Ka whakatau tata, ka whakamahi hautanga māmā e mōhioia ana, hei whakaoti rapanga e whai wāhi mai ana te whakarea me te whakawehe tau ā-ira. Hei tauira:</p> <p>$0.4 \times 2.8 = 1.12$ ($0.4 < \frac{1}{2}$)</p> <p>$8.1 \div 0.3 = 27$ ($81 \div 3$)</p>	<p>$3.2 \times 0.3 = 0.96$</p> <p>$0.72 \times 8 = 5.76$</p> <p>$0.25 \times 2.4 = 0.6$</p> <p>$15 \times 0.33 = 4.95$</p> <p>$5.6 \div 0.7 = 8$</p> <p>$4.8 \div 1.5 = 3.2$</p> <p>$7.2 \div 0.36 = 20$</p> <p>$0.9 \div 0.03 = 30$</p> <p>$24 \div 36 = 0.66$</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Te Whētui Hautau, Tau ā-Ira (wh.108) <p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakatau Tata (wh.72) • Te Whakarea Hautanga ā-Ira (wh.100) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Whakapaipai i te Rūma Moe (wh.6) • Te Pakeke Haere i Tuarangi (wh.8) • Ka Pai te Mātaitai Parai (wh.9) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Kia Tika te Tapatapahi i te Tōtiti (wh.14)
<p>Ka whakamahi tauwehe pātahi, me te pāpātanga waetahi hei whakaoti rapanga pāpātanga. Hei tauira:</p> <p>490km i te 14 haora \rightarrow 35km/h (mā te whakawehe ki te 7 kātahi ki te 2).</p>	<p>Ko te horoi motukā, ko te kato huarākau, ko te tawhiti o te haere i te wā hei horopaki:</p> <p>18 i te ono haora, nō reira, e hia i te 15 haora? ($18:6 = 45:15$)</p> <p>$14:21 = 20:30 = 6:9$</p> <p>$56:16 = 21:6 = 7:2$</p> <p>$28:12 = 49:21 = 7:3$</p> <p>$27:36 = 12:16 = 3:4$</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Te Pāpātanga (wh.121)
<p>Ka whakaoti rapanga whakawehe e whai wāhi mai ana te otinga hautanga.</p> <p>Ka whakaaturia te toenga hei hautau, hei tau ā-ira rānei, i runga anō i te horopaki o te rapanga. Hei tauira:</p> <p>$19 \div 8 = 2$, toenga $3 = 2\frac{3}{8} = 2.375$</p>	<p>$30 \div 4 = 7 \text{ t}2 = 7\frac{1}{2} = 7.5$</p> <p>$17 \div 3 = 5 \text{ t}2 = 5\frac{2}{3} = 5.6\dot{6}$</p> <p>$43 \div 5 = 8 \text{ t}3 = 8\frac{3}{5} = 8.6$</p> <p>$157 \div 10 = 15 \text{ t}7 = 15\frac{7}{10} = 15.7$</p> <p>$90 \div 8 = 11 \text{ t}2 = 11\frac{1}{4} = 11.25$</p> <p>$58 \div 6 = 9 \text{ t}4 = 9\frac{2}{3} = 9.66$</p>	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • E Hia ka Toe mai? (wh.87) • Te Whakamahi Toenga (wh.89)
<p>Ka tūhono, ka wāwāhi ōwehenga, ā, ka huri hei hautau, hei ōrau hoki. Hei tauira:</p> <p>$2:5 \oplus 2:5 \oplus 3:4 = 7:14 = 1:2 \rightarrow \frac{1}{3} \rightarrow 33\frac{1}{3}\%$</p>	<p>$5:6 \oplus 7:12 = 12:18 = 2:3$</p> <p>$9:4 \oplus 7:6 = 16:10 = 8:5$</p> <p>$2:3 \oplus 12:11 = 14:14 = 1:1$</p> <p>$8:5 \oplus 7:5 = 15:10 = 3:2$</p>	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Ōwehenga me te Hautanga hei Tikanga Tohatoha (wh.112)

	$7:2 \oplus 9:4 = 16:6 = 8:3$ $2:5 \oplus 2:5 \oplus 8:5 = 12:15 = 4:5$ $7:3 \oplus 7:3 \oplus 7:3 \oplus 3:7 = 24:16 = 3:2$ $1:3 \oplus 1:3 \oplus 4:5 \oplus 4:5 \oplus 4:5 = 14:21 = 2:3$	
<p>Ka whiriwhiria ngā hautau kei waenganui i ētahi hautau e rua, mā te whakamahi hautanga ōrite, mā te huri hei tau ā-ira, hei ōrau rānei, mā te whakamahi rānei i ngā hautau māmā e mōhioia ana. Hei taurira:</p> $\frac{3}{5} < \frac{9\frac{1}{2}}{15} < \frac{2}{3}, \frac{9\frac{1}{2}}{15} = \frac{19}{30}$	<p>10% o te 48 \leftrightarrow 30% o te 48 50% o te 64 \leftrightarrow 25% o te 64</p> <p>Whiriwhiria he hautau kei waenganui i ēnei:</p> <p>te $\frac{2}{5}$ me te $\frac{1}{2}$ te $\frac{1}{4}$ me te $\frac{3}{10}$ te $\frac{3}{4}$ me te $\frac{4}{5}$ te $\frac{3}{5}$ me te $\frac{7}{12}$ te $\frac{5}{8}$ me te $\frac{7}{12}$ te $\frac{7}{8}$ me te $\frac{9}{10}$ te $\frac{5}{4}$ me te $\frac{6}{5}$ te $\frac{3}{7}$ me te $\frac{4}{9}$ te $\frac{8}{9}$ me te $\frac{9}{10}$ te $\frac{3}{4}$ me te $\frac{7}{11}$</p>	<p><i>TPT, Pukapuka 7:</i> • Hautau Waenganui (wh.115)</p>
<p>Ka whakaoti rapanga e whai wāhi mai ana te whakamahinga o te hautau hei ine i tētahi atu hautau. Hei taurira:</p> $\frac{3}{4} \div \frac{2}{3} = \frac{9}{12} \div \frac{8}{12} = 1\frac{1}{8}$	$\frac{7}{8} \div \frac{1}{4} = \frac{7}{8} \div \frac{2}{8} = \frac{7}{2} = 3\frac{1}{2}$ $\frac{4}{5} \div \frac{1}{2} = \frac{8}{10} \div \frac{5}{10} = \frac{8}{5} = 1\frac{3}{5}$ $\frac{9}{10} \div \frac{3}{4} = \frac{18}{20} \div \frac{15}{20} = \frac{18}{15} = 1\frac{1}{5}$ $\frac{7}{8} \div \frac{2}{3} = \frac{21}{24} \div \frac{16}{24} = \frac{21}{16} = 1\frac{5}{16}$ $\frac{1}{4} \div \frac{2}{5} = \frac{5}{20} \div \frac{8}{20} = \frac{5}{8}$ $\frac{3}{10} \div \frac{3}{4} = \frac{6}{20} \div \frac{15}{20} = \frac{6}{15} = \frac{2}{5}$	<p><i>TPT, Pukapuka 7:</i> • Whakawehenga Hautau (wh.117)</p>
<p>Ka whakaoti rapanga e whai wāhi mai ana te whakapiki ōrau, te whakaheke ōrau rānei. Hei taurira:</p> <p>Ka whakapikia te wāriu o te whare mai i te \$240,000 ki te \$270,000, arā, e \$30,000 te whakapikinga. Ko te $\frac{30,000}{240,000}$ te hautaunga whakapiki = $\frac{1}{8} = 12.5\%$</p>	<p>E \$69 te utu i muri i te tāpiritanga o te 15% tāke hokohoko (GST), nō reira, ko te \$60 te utu ake (kāore he tāpiritanga GST). Arā, $69 \div 1.15 = 60$.</p> <p>\$92 \rightarrow \$80 (karekau he GST) \$138 \rightarrow \$120 (karekau he GST) \$230 \rightarrow \$200 (karekau he GST)</p> <p>Te whakapikinga wāriu whare: \$125,000 \rightarrow \$150,000 = 20% te whakapikinga \$96,000 \rightarrow \$168,000 = 75% te whakapikinga</p>	<p><i>TPT, Pukapuka 8:</i> • Tātaitanga Ōrau (wh.73) • Te Whakatau Tata i te Ōrau (wh.74)</p>

	<p>$\\$495,000 \rightarrow 495,000 = 0\%$ te whakapikinga</p> <p>$\\$333,000 \rightarrow 444,000 = 33\%$ te whakapikinga</p> <p>$\\$256,000 \rightarrow 332,000 = 29.7\%$ te whakapikinga</p>	
<p>Ka whakatau tata, ka whakaoti i ngā rapanga ōrau, e whai wāhi mai ana te tauoti, te tau ā-ira rānei. Hei tauira: E 35 o ngā tītere 56 a Hinewai i ū. E hia te ōrau o ana tītere i ū?</p>	<p>25% o te 64 = 16</p> <p>80% o te 45 = 36</p> <p>35% o te 24 = 8.4</p> <p>65% o te 36 = 23.4</p> <p>58% o te 82 \approx 60% o te 80 = 48 (ko te 47.56 te otinga tōtika)</p> <p>77% o te 38 \approx 75% o te 40 = 30 (ko te 29.26 te otinga tōtika)</p> <p>32 o roto i te 48 \approx 32 o roto i te 50 = 64% (ko te 66.6% te ōrau tōtika)</p> <p>32 o roto i te 39 \approx 32 o roto i te 40 = 80% (ko te 82% te ōrau tōtika)</p> <p>22 o roto i te 29 \approx 22 o roto i te 30 = $3\frac{1}{3} \times 22 = 77\%$ (ko te 75.8% te ōrau tōtika)</p>	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • He Rautaki Matarua hei Whakaoti Rapanga Ōrau (wh.76) • He Rautaki Matatahi hei Whakaoti Rapanga Ōrau (wh.78) • He Rapanga Ōrau Kōaro (wh.113) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Hoki mā Runga Waka Rererangi (wh.2)
<p>Ka whakamahi tauwehe toitū, hei matapae mēnā he toenga hautau noa, he toenga hautau tāruarua rānei ka hua mai i tētahi whakawehenga.</p>	<p>Whiriwhiria ngā tauwehe toitū o ēnei: 20, 16, 25, 28, 15, 40, 18, 36, 70</p> <p>Whiriwhiria mēnā he toenga hautau noa, he toenga hautau tāruarua rānei ka hua mai i ēnei whakawehenga:</p> <p>$1 \div 16 = \square$</p> <p>$1 \div 25 = \square$</p> <p>$1 \div 28 = \square$</p> <p>$1 \div 15 = \square$</p> <p>$1 \div 40 = \square$</p> <p>$1 \div 18 = \square$</p> <p>$1 \div 36 = \square$</p> <p>$1 \div 70 = \square$</p> <p>He aha i hua mai ai he toenga hautau noa, he toenga hautau tāruarua rānei i ēnei whakawehenga?</p> <p>$\frac{3}{15} = 0.2$</p> <p>$\frac{5}{15} = 0.3\dot{3}$</p> <p>$\frac{9}{18} = 0.5$</p> <p>$\frac{2}{18} = 0.1\dot{1}$</p>	

<p>Ka whakaoti rapanga e whai wāhi mai ana te pāpātanga kōaro. Hei tauira:</p> <p>E 9 ngā rangi ka oti i ngā tāngata tokowhā tētahi whare te peita. E hia ngā rangi ka oti taua whare te peita i ngā tāngata tokotoru?</p> <p>$4 \times 9 = 36$ ngā rangi mō te tangata kotahi. $36 \div 3 = 12$ ngā rangi mō ngā tāngata tokotoru.</p>	<p>Te hanga whare:</p> <p>E 2 ngā rangi, ka oti i ngā tāngata tokorima. E hia ngā rangi ka oti i te tokorua?</p> <p>E 5 ngā rangi.</p> <p>E 7 ngā rangi, ka oti i ngā tāngata tokowhā. E hia ngā rangi ka oti i ngā tāngata 14?</p> <p>E 2 ngā rangi.</p> <p>E 2 ngā rangi, ka oti i ngā tāngata tokorima. E hia ngā rangi ka oti i te tokorua?</p> <p>E 5 ngā rangi.</p> <p>E 6 ngā rangi, ka oti i ngā tāngata tokoono. E hia ngā rangi ka oti i te tokowaru?</p> <p>E 4.5 ngā rangi.</p> <p>E 4 ngā rangi, e 3 ngā heihei, e 6 ngā hēki ka puta mai. E hia rangi kia puta ngā hēki 10, mēnā e 5 ngā heihei?</p> <p>E 4 ngā rangi.</p> <p>E 7 ngā rā hei whakatū mā ētahi kaimahi tokowaru i tētahi whare. Nō reira, e hia ngā rā hei whakatū i ngā whare e 3, mēnā tokoono ngā kaimahi?</p> <p>E 28 ngā rangi.</p>	<p><i>TPT Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakatairite Pāpātanga (wh.111)
<p>Ka whakaoti rapanga pākoki. Hei tauira:</p> <p>He aha te koki rewa o te waka rererangi, mēnā e 679m tōna teitei, ā, e 2,604 te tawhiti o tana haere i muri i te rerenga atu?</p>		<p><i>TPT Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Ōwehenga Pākoki (wh.129)