|  |  |  |
| --- | --- | --- |
| **Object** | **Action** | **State** |
| Bottle | Open  Close | Open → Closed  Closed → Open |
| Putt  Pour  Take | Unfilled → Filled  Filled → Unfilled |
| 1. Glass 2. Cup 3. Mug |  |  |
| Put  Pour | Filled → Unfilled |
| 1. Container 2. Box | Put  Stuff | Empty → Occupied(?) |
| Take | Occupied(?) → Empty |
| Book | Open  Close | Open → Closed  Closed → Open |
| Phone  (Symmetric states for charger) | Plug  Put  Attach  Pull  Take | Unconnected (to charger)→ Connected (to charger)  Connected (to charger) → Unconnected (to charger) |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pair | Common Nodes | WUP | Common Paths | Path Patterns + WUP | Weighted Final | Result |
| Bottle/Open (obj-act) | 0.0331 | 0.375 | 0.1149 | 0.4106 | 0.3973 | ARE related adequately |
| Bottle/Close (obj-act) | 0.0108 | 0.1333 | 0.0300 | 0.2965 | 0.2122 | ARE related adequately |
| Bottle/Put | 0.0230 | 0.1052 | 0.0718 | 0.2799 | 0.2121 | ARE related adequately |
| Bottle/Pour | 0.1174 | 0.1352 | 0.3474 | 0.3135 | 0.3478 | ARE related adequately |
| Bottle/Take | 0.0432 | 0.1052 | 0.1339 | 0.3816 | 0.2913 | ARE related adequately |
| Bottle/Fill | 0.0488 | 0.1333 | 0.1865 | 0.3517 | 0.3080 | ARE related adequately |
| Bottle/Open (obj-state) | 0.0331 | 0.375 | 0.1149 | 0.4106 | 0.3973 | ARE related adequately |
| Bottle/Close (obj-state) | 0.0108 | 0.1333 | 0.0300 | 0.3977 | 0.2628 | ARE related adequately |
| Glass/Put | 0.0240 | 0.1333 | 0.0784 | 0.2293 | 0.2001 | ARE related adequately |
| Glass/Pour | 0.1280 | 0.1552 | 0.3918 | 0.27067 | 0.3704 | ARE related adequately |
| Glass/Fill | 0.0522 | 0.1818 | 0.2018 | 0.3107 | 0.3123 | ARE related adequately |
| Cup/Put | 0.0244 | 0.1111 | 0.0690 | 0.2988 | 0.2231 | ARE related adequately |
| Cup/Pour | 0.1082 | 0.1328 | 0.3586 | 0.3201 | 0.3649 | ARE related adequately |
| Cup/Fill | 0.0163 | 0.1 | 0.0523 | 0.3274 | 0.2892 | ARE related adequately |
| Mug/Put | 0.0254 | 0.25 | 0.0842 | 0.3251 | 0.2942 | ARE related adequately |
| Mug/Pour | 0.1165 | 0.1552 | 0.3713 | 0.2197 | 0.3367 | ARE related adequately |
| Mug/Fill | 0.060 | 0.5 | 0.2350 | 0.2396 | 0.4431 | ARE related adequately |
| Container/Put | 0.0219 | 0.1176 | 0.0722 | 0.2887 | 0.2210 | ARE related adequately |
| Container/Stuff | 0.0284 | 0.3333 | 0.1081 | 0.4597 | 0.4025 | ARE related adequately |
| Container/Empty | 0.0426 | 0.9333 | 0.1607 | 0.4966 | 0.7238 | ARE related adequately |
| Container/Occupied | 0.005 | 0.1552 | 0.0141 | 0.3307 | 0.2095 | ARE related adequately |
| Box/Take | 0.0256 | 0.1111 | 0.0941 | 0.4103 | 0.2885 | ARE related adequately |
| Box/Occupied | 0.0070 | 0.132 | 0.01832 | 0.55 | 0.3211 | ARE related adequately |
| Box/Empty | 0.0460 | 0.875 | 0.2116 | 0.5058 | 0.7180 | ARE related adequately |
| Book/Open (obj-act) | 0.0320 | 0.3529 | 0.1338 | 0.3818 | 0.3814 | ARE related adequately |
| Book/Close (obj-act) | 0.0087 | 0.125 | 0.0266 | 0.4102 | 0.2641 | ARE related adequately |
| Book/Open (obj-state) | 0.0320 | 0.3529 | 0.1338 | 0.3818 | 0.3814 | ARE related adequately |
| Book/Close (obj-state) | 0.0087 | 0.125 | 0.0266 | 0.4102 | 0.2641 | ARE related adequately |
| Phone/Plug | 0.0588 | 0.5555 | 0.1754 | 0.4372 | 0.5222 | ARE related adequately |
| Phone/Put | 0.0352 | 0.1052 | 0.1059 | 0.2901 | 0.2330 | ARE related adequately |
| Phone/Attach | 0.0312 | 0.125 | 0.0992 | 0.3089 | 0.2369 | ARE related adequately |
| Phone/Pull | 0.0309 | 0.125 | 0.1102 | 0.3028 | 0.2473 | ARE related adequately |
| Phone/Connected | 0.0352 | 0.1052 | 0.1059 | 0.2741 | 0.2413 | ARE related adequately |
| **Phone/Unconnected** | **0.0520** | **0.132** | **0.1431** | **0.1125** | **0.0940** | **are NOT related adequately** |
| Charger/Plug | 0.0174 | 0.2962 | 0.0374 | 0.4066 | 0.3328 | ARE related adequately |
| Charger/Put | 0.0145 | 0.0714 | 0.0353 | 0.2078 | 0.1476 | ARE related adequately |
| Charger/Attach | 0.0158 | 0.125 | 0.0362 | 0.3558 | 0.2329 | ARE related adequately |
| Charger/Pull | 0.0167 | 0.08 | 0.0364 | 0.2963 | 0.1960 | ARE related adequately |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Pair**  **NOT Related** | Common Nodes | WUP | Common Paths | Path Patterns + WUP | Weighted Final | Result |
| Knife/Unconnected | 0.001 | 0.01 | 0.0028 | 0.1 | 0.0514 | are NOT related adequately |
| Knife/Connected | 0.0311 | 0.01 | 0.0969 | 0.2799 | 0.1880 | are NOT related adequately |
| Fork/Unconnected | 0.0006 | 0.01 | 0.0009 | 0.075 | 0.038 | are NOT related adequately |
| Fork/Connected | 0.0322 | 0.01 | 0.098 | 0.2542 | 0.1761 | are NOT related adequately |
| **Dish/Attach** | **0.0265** | **0.36** | **0.080** | **0.3236** | **0.2018** | **ARE related adequately** |
| **Book/Dial** | **0.0387** | **0.5** | **0.1463** | **0.3637** | **0.4509** | **ARE related adequately** |
| **Fork/Dial** | **0.0426** | **0.5** | **0.1244** | **0.5802** | **0.5349** | **ARE related adequately** |
| Lamp/Collide | 0 | 0.01 | 0 | 0 | 0 | are NOT related adequately |
| Remote Control/Collide | 0 | 0.01 | 0 | 0 | 0 | are NOT related adequately |
| Glass/Fail | 0.009 | 0.01 | 0.0314 | 0.3134 | 0.1719 | are NOT related adequately |
| Lamp/Fail | 0.009 | 0.01 | 0.0284 | 0.2754 | 0.1521 | are NOT related adequately |