Online Supplementary Materials A

Table 1. Target Words with Information of Pinyin, English Meaning, Part of Speech, Structural Configuration, Word Frequency, Number of Strokes, and Word Group

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Target Word | Pinyin | English Meaning | Part of Speech | Structural Configuration | Word Frequency | Number of Strokes  | Word Group |
| 1 | 贫穷 | pínqiónɡ | poor | adj | TD+TD | 74 | 15 | a |
| 2 | 夺取 | duóqǔ | seize | v | TD+LR | 70 | 14 | a |
| 3 | 忽略 | hūlüè | neglect | v | TD+LR | 71 | 19 | a |
| 4 | 暗示 | ànshì | imply | v | LR+TD | 75 | 18 | a |
| 5 | 挑选 | tiāoxuǎn | choose | v | LR+HE | 58 | 18 | a |
| 6 | 弥补 | míbǔ | remedy | v | LR+LR | 63 | 15 | a |
| 7 | 形状 | xíngzhuàng | shape | n | LR+LR | 70 | 14 | a |
| 8 | 脆弱 | cuìruò | fragile | adj | LR+LR | 76 | 20 | a |
| 9 | 循环 | xúnhuán | circulate | v | LR+LR | 87 | 20 | a |
| 10 | 流传 | liúchuán | spread | v | LR+LR | 88 | 16 | a |
| 11 | 恶劣 | èliè | vile | adj | TD+TD | 75 | 16 | b |
| 12 | 驾驶 | jiàshǐ | drive | v | TD+LR | 68 | 16 | b |
| 13 | 审判 | shěnpàn | judge | v | TD+LR | 87 | 15 | b |
| 14 | 欺负 | qīfu | bully | v | LR+TD | 85 | 18 | b |
| 15 | 强迫 | qiǎngpò | compel | v | LR+HE | 61 | 20 | b |
| 16 | 指挥 | zhǐhuī | command | n | LR+LR | 61 | 18 | b |
| 17 | 细致 | xìzhì | careful | adj | LR+LR | 65 | 18 | b |
| 18 | 消耗 | xiāohào | consume | v | LR+LR | 68 | 20 | b |
| 19 | 挖掘 | wājué | excavate | v | LR+LR | 72 | 20 | b |
| 20 | 珍惜 | zhēnxī | treasure | v | LR+LR | 78 | 20 | b |
| 21 | 姿态 | zītài | posture | n | TD+TD | 86 | 17 | c |
| 22 | 尖锐 | jiānruì | sharp | adj | TD+LR | 66 | 18 | c |
| 23 | 奖励 | jiǎnglì | reward | v | TD+LR | 83 | 16 | c |
| 24 | 神奇 | shénqí | magical | adj | LR+TD | 72 | 17 | c |
| 25 | 叙述 | xùshù | narrate | v | LR+HE | 68 | 17 | c |
| 26 | 讽刺 | fěngcì | satirize | v | LR+LR | 59 | 14 | c |
| 27 | 伴随 | bànsuí | follow | v | LR+LR | 65 | 18 | c |
| 28 | 谈论 | tánlùn | discuss | v | LR+LR | 71 | 16 | c |
| 29 | 抽烟 | chōuyān | smoke | v | LR+LR | 77 | 18 | c |
| 30 | 耽误 | dānwù | delay | v | LR+LR | 78 | 19 | c |

*Notes*. adj = adjective. v = verb. n = noun. LR = left-right. TD = top-down. HE = half-enclosure.

The information of pinyin, English meaning, part of speech, and word frequency were collected from *A Frequency Dictionary of Mandarin Chinese* (Xiao et al., 2009), except for the following modifications. The pinyin for *审判* was corrected from *shēnpàn* to *shěnpàn*, and the original English meaning of *bring to trial* was replaced with *judge* (from iCIBA, an online Chinese-to-English dictionary, https://www.iciba.com/) to reduce the word length. For *叙述* and *谈论*, the original English meanings of *tell about* and *talk about* were changed respectively to *narrate* and *discuss* (from iCIBA) for word length reduction. The English meaning of *讽刺* was changed from *satirise* to *satirize* for American English.

Table 2. Radicals Shared Between Target Characters and Textbook Characters

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| Group a |
| Target Word | Target Character | Textbook Character | Textbook Lesson | Radical Type |
| 弥补 | 弥 (mí) | 你 (nǐ) | 1 | phonetic |
| 挑选 | 挑 (tiāo) | 跳 (tiào) | 4 |  |
|  | 选 (xuǎn) | 先 (xiān) | 1 |  |
| 流传 | 传 (chuán) | 专 (zhuān) | 8 |  |
| 循环 | 环 (huán) | 不 (bù) | 1 | non-phonetic |
| 夺取 | 夺 (duó) | 大 (dà) | 3 |  |
|  | 取 (qǔ) | 欢 (huān) | 4 |  |
|  | 取 (qǔ) | 最 (zuì) | 8 |  |
| 暗示 | 暗 (àn) | 音 (yīn) | 4 |  |
| 忽略 | 略 (lüè) | 客 (kè) | 4 |  |
|  | 略 (lüè) | 路 (lù) | 10 |  |
| 贫穷 | 贫 (pín) | 分 (fēn) | 6 |  |
| 形状 | 形 (xíng) | 开 (kāi) | 6 |  |
| Group b |
| Target Word | Target Character | Textbook Character | Textbook Lesson | Radical Type |
| 欺负 | 欺 (qī) | 期 (qī) | 3 | phonetic |
| 审判 | 判 (pàn) | 半 (bàn) | 3 |  |
| 消耗 | 耗 (hào) | 毛 (máo) | 9 |  |
| 驾驶 | 驾 (jià) | 加 (jiā) | 11 |  |
| 恶劣 | 恶 (è) | 想 (xiǎng) | 3 | non-phonetic |
|  | 劣 (liè) | 少 (shǎo) | 9 |  |
| 强迫 | 迫 (pò) | 白 (bái) | 2 |  |
|  | 强 (qiǎng) | 虽 (suī) | 9 |  |
| 珍惜 | 惜 (xī) | 错 (cuò) | 4 |  |
| 细致 | 致 (zhì) | 到 (dào) | 6 |  |
| 挖掘 | 掘 (jué) | 出 (chū) | 10 |  |
| Group c |
| Target Word | Target Character | Textbook Character | Textbook Lesson | Radical Type |
| 伴随 | 伴 (bàn) | 半 (bàn) | 3 | phonetic |
| 姿态 | 态 (tài) | 太 (tài) | 4 |  |
|  | 姿 (zī) | 次 (cì) | 13 |  |
| 谈论 | 论 (lùn) | 伦 (lún) | 14 |  |
| 抽烟 | 抽 (chōu) | 邮 (yóu) | 10 |  |
|  | 烟 (yān) | 因 (yīn) | 3 | non-phonetic |
| 尖锐 | 尖 (jiān) | 小 (xiǎo) | 1 |  |
|  | 尖 (jiān) | 大 (dà) | 3 |  |
|  | 锐 (ruì) | 说 (shuō) | 6 |  |
| 奖励 | 奖 (jiǎng) | 大 (dà) | 3 |  |
| 神奇 | 奇 (qí) | 大 (dà) | 3 |  |
|  | 奇 (qí) | 可 (kě) | 3 |  |
| 叙述 | 叙 (xù) | 欢 (huān) | 4 |  |
|  | 叙 (xù) | 除 (chú) | 8 |  |